PROJECT SAFETY PLAN (PSP)
FORMER CARBORUNDUM FACILITY
WHEATFIELD NY
(SANBORN)

Prepared for:

ATLANTIC RICHFIELD COMPANY
4850 EAST 49TH STREET
MBC 3
CUYAHOGA HEIGHTS, OHIO 44125

Prepared by:

PARSONS
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SEPTEMBER 2006
Revision 1

Reviewed and Approved by:	**Name**	**Date**
Project Manager:	Mark S. Raybuck	**9/28/06**

Note: This PSP must be used in conjunction with the Health, Safety, Security, and Environment Plan for Parsons BP Program Site Operations (Program HSSE Plan). Both this PSP and the Program HSSE Plan must be present on site whenever field personnel are conducting work.

SITE EMERGENCY RESPONSE PLAN

FORMER CARBORUNDUM FACILITY, WHEATFIELD, NY

I. PURPOSE & SCOPE OF PLAN

The Site Emergency Response Plan (SERP) provides the on-site user with critical information to be used in the event of an emergency. A copy of the SERP must be posted in the support zone at the work site and a copy should be with all on-site personnel during field activities. In the event of any situation or unplanned occurrence requiring assistance, (e.g., fire, major injury, crime, major release), **CALL 911 FIRST** and then notify the Site Safety Officer (SSO).

II. EMERGENCY CONTACTS

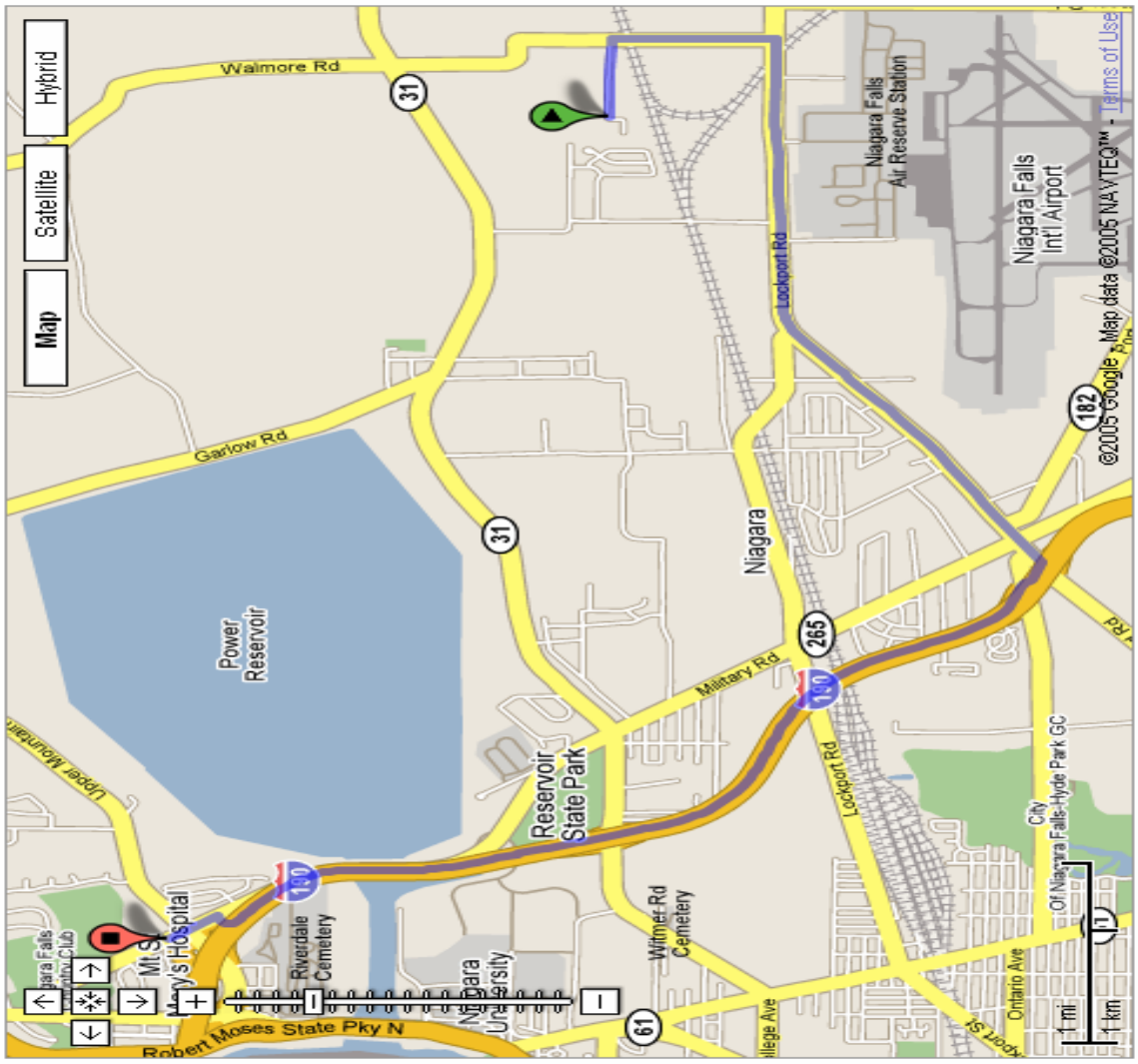
In an emergency, **CALL 911 FIRST,** and then notify the SSO. Once the SSO is notified, the SSO will call the emergency contacts included in the attached Emergency Contacts List in the order they are listed until the SSO speaks to someone live. In the event field personnel are injured and are chemically contaminated, the SSO must contact the emergency room director ahead of time so hospital personnel can prepare for the situation. The emergency contacts list, included on Page SERP-5, must be in an easily accessible location at the site.

III. EMERGENCY ROUTE/MAPS

The nearest hospital/emergency room is MT ST MARYS HOSP OF NIAGARA FALLS, 5300 Military Rd., Lewiston NY 14092. The hospital location, directions from the Site, and a driving map are shown below.

MT ST MARY'S HOSPITAL OF NIAGARA FALLS
Approximate Travel Time: 13 min.
Approximate Travel Distance: 8.4 miles.
Emergency Room: (716) 298-2325
Main Phone Number: (716) 297-4800

Full Route View



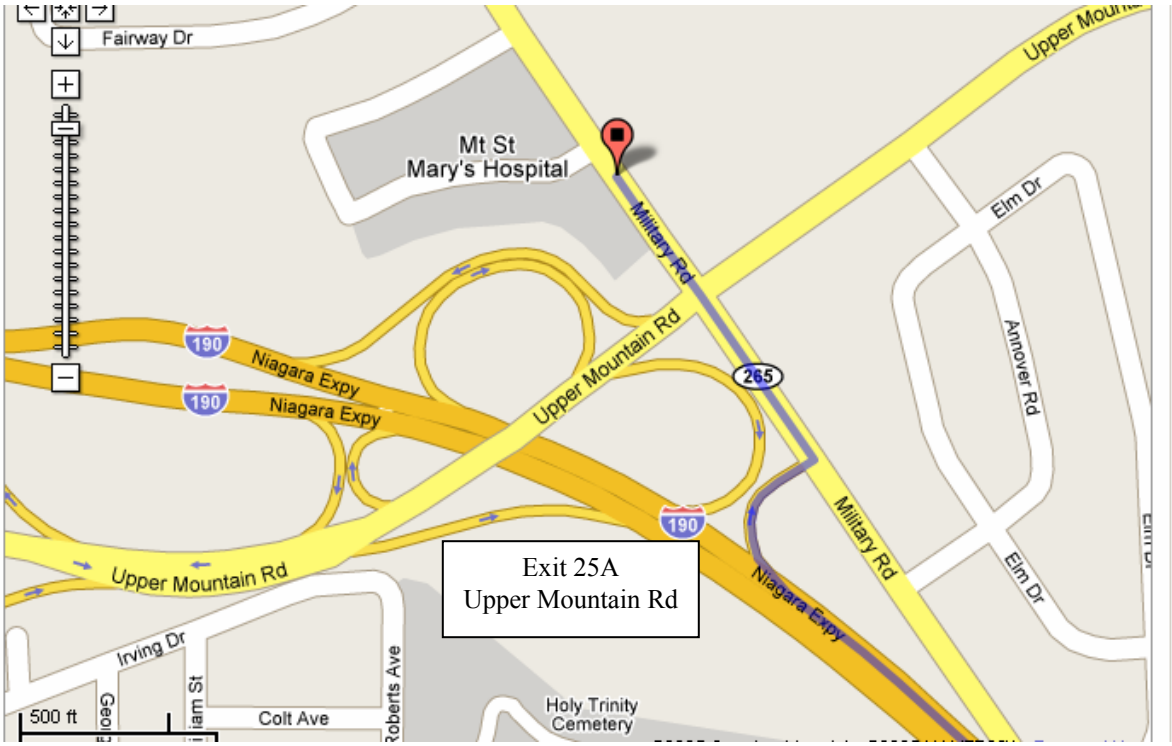
Start address:	Cory Dr Sanborn, NY 14132
End address:	5300 Military Rd Lewiston, NY 14092
Distance:	8.4 mi (about 13 mins)

Reverse directions

1. Head **east** from **Cory Dr** - go **0.4 mi**
2. Turn **right** at **Walmore Rd** - go **0.6 mi**
3. Turn **right** at **Lockport Rd** - go **1.6 mi**
4. Bear **left** at **Packard Rd** - go **1.6 mi**
5. Turn **right** at **Niagara Expy** - go **0.1 mi**
6. Bear **left** into the **I-190 N** entry ramp - go **3.7 mi**
7. Take the **RT-265** exit **25A** to **Lewiston** - go **0.1 mi**
8. Turn **left** at **Military Rd** - go **0.2 mi**

These directions are for planning purposes only. You may find that construction projects, traffic, or other events may cause road conditions to differ from the map results.

End: 5300 Military Rd, Lewiston NY



IV. EXTERNAL CONTACT/EMERGENCY INFORMATION

The area code for local emergency telephone numbers is (716). The 911 call service can be used at the Sanborn Site.

Other phone numbers:

Fire Department	911 (Emergency)
Police Department	911 (Emergency)
Ambulance	911 (Emergency)
Poison Control Center	1.800.222.1222
National Response Center (Reporting Oil and Chemical Spills	1.800.424.8802
Parsons Contract Physician (Qualisys)	1.800.874.4676
OSHA (Nationwide)	1.800.321.6742
UFPO (NYS One call system)	1.800.962.7962

V. EVACUATION AND CONTINGENCY PLAN

In the event of an emergency:

- **Leave area if danger exists, move to parking area or other safe locations.**
- **Call 911 if warranted, communicate emergency to co-workers and other site personnel.**
- **Exit the building through the nearest exit.**
- **All on-site personnel will meet at parking area in front of the treatment Plant.**
- **If evacuation of the site is necessary, all on-site personnel will proceed to the entrance at the end of Cory Dr.**
- **Field heath and safety person (or team leader) will conduct a role call and confirm all persons are accounted for.**
- **Await fire and/or police teams, prepare to guide them and /or inform them of site conditions.**
- **Use the following page for reporting contact numbers.**

VI. PLAN MAINTENANCE

The project manager will update this SERP at least annually, or more frequently in warranted by changes in Site conditions. On-site personnel will be responsible for proposing modifications to the project manager, as needed.

VII. TRAINING AND EXERCISE

All personnel must read and understand this SSP prior to arrival on site.

VIII. NON-REGULATORY REPORTING GUIDELINES

For non-regulatory reporting guidelines, see the BP "Remediation Management Incident & Near-Miss Notification and Reporting Guidance Manual." These reporting documents are located in the "*Health, Safety, Security, and Environment Plan for Parsons BP Program Site Operations (Program HSSE Plan)"*

IX. DISTRIBUTION

This PSP will be distributed to the following personnel:

PARCOMM Safety Manager;
Project Manager;
Project Safety Manager;
Site Safety Officer; and
Field Team.

Remediation Management Incident Reporting List

All incidents occurring on an RM project or site shall be reported according the HSSE Expectations found on www.gemhse.com
As a minimum, all injuries, spills greater than 1 barrel and all property damage greater than $500 should be reported to RM management **immediately**.
Additionally, Notices of Violation and any incident which could be reported in the media should be reported immediately.
Reporting must be done to a person and not via voice message, email or fax. One must ensure contact is made.
If you unable to contact the first contact on the list, then you should attempt to call the next person on the list.

Sanborn

Remediation Management Organization Notification					
Position	**Person**	**Office**	**Cell Phone**	**Pager**	**Home**
RM Environmental Manager	William Barber	216-271-8038	216-408-1660		330-296-8498
North Region HSSE Coordinator	Jeff Kole	216-271-8204	216-403-2383		440-449-3065
North Deputy Region Manager	Lori Washington	630-836-6564	630-853-7219		708-756-7944
North Region Manager	Patricia Gallery	630-836-7109	630-333-6388		630-455-0406
RM Americas HSSE Manager	Dan Hardisty	99532 593577	99599152586		dan.hardisty@se1.bp.com
RM Americas HSSE Admin	Julie Eisinger	630-836-7107	630-750-4827		
BP Naperville 24 Hour Notification Center		800-321-8642			

Supplier Organization Notification					
Company & Position	**Person**	**Office**	**Cell Phone**	**Pager**	**Home**
Parsons 24 Hr Emergency No.	On Call	1-877-317-9703			
Parsons Project Coordinator	George Hermance	716-633-7074	716-861-7882		716-741-8155
Parsons Project Manager	Mark Raybuck	716-633-7074	716-713-2491		716-688-5704
Parsons Deputy Program Manager	Scott Hartsough	513-552-7001	513-368-9861		513-759-2588
Parsons Program Manager	Bill Hughes	216-486-9005	216-509-0668		440-684-4072
Parsons Program Safety Representative	Bill Bradford	315-451-9560	315-546-5146		
O&M Enterprises (subcontractor)	Rick Becken	716-731-5322	716-435-8500		716-694-4977

Other useful numbers for this portfolio					
Company & Position	**Person**	**Office**	**Cell Phone**	**Pager**	**Home**
BP Public Affairs - New York	John Curry	410-825-4287	443-562-7274		717-227-8151
Legal	Chuck Pinzone	216-271-8254	216-287-7362		
Hospital	Site Specific HASP	716-297-4800			

TABLE OF CONTENTS

APPENDICES

SECTION 1 – INTRODUCTION

1.1 PARSONS WORKPLACE HEALTH & SAFETY POLICY

Exhibit 1-1 – Parsons Workplace Health and Safety Policy

CORPORATE POLICY
Workplace Health & Safety

POLICY: WORKPLACE HEALTH AND SAFETY

STATEMENT OF POLICY:

As an industry-leading engineering, construction and technical services firm, Parsons is firmly committed to maintaining a safe and healthy working environment at all its offices and project facilities. We share the National Safety Council's Safety and Health Code of Ethics as the principles guiding our commitment to safety.

- We will hold safety and health as our highest core value.
- Executive management will lead the safety improvement process.
- Safety will be a responsibility shared by everyone in our organization.
- Safety performance will be a key indicator of our organizational excellence and will be incorporated into our business processes.
- We will communicate safety performance openly with employees.
- All employees will be given the knowledge and skills necessary to safely perform their jobs.
- We will extend our safety efforts beyond the workplace to include transportation, homes and communities.
- We will continually strive to improve our safety and health processes.

To meet its health and safety objectives, all Parsons employees are expected to act proactively with regard to health and safety issues. This requires the combined efforts of a concerned management, responsible and knowledgeable supervision, and conscientious, well-trained employees.

Parsons will take all reasonable action to meet or exceed the applicable occupational health and safety requirements, domestically and internationally, and will continuously monitor and improve operations, procedures, technologies and programs that are conducive to maintaining a safe and healthy working environment.

RESPONSIBILITIES:

Parsons GBU management and supervisory personnel are responsible to:

- Comply with this policy and ensure that the applicable health and safety requirements at each domestic and international office and project facility are effectively implemented and monitored at all times.

1 of 3

The Company may change, rescind or add to any policies, benefits or practices described on the PWEB, other than employment-at-will policies, from time to time in its sole and absolute discretion with or without prior notice. The Company will advise employees of material changes within a reasonable time.

RESPONSIBILITIES: (cont'd.)

- Ensure that the applicable health and safety requirements at each domestic and international project facility are effectively integrated with the preparation of proposals, project planning, and project execution.
- Monitor subcontractor safety performance in accordance with contract specifications as required by the contract with client.
- Ensure that safety information and statistics are reported to Parsons Corporate Safety Manager on a consistent and regular basis, as shown in Appendix.1, *Safety Monthly Report*.

Parsons Corporate Safety personnel are responsible to:

- Develop, communicate, and oversee Parsons health and safety programs at all Parsons business units.
- Provide assistance to Parsons business unit managers regarding health and safety regulations, reporting requirements, safety training, and other related issues.
- Monitor the effectiveness of Parsons health and safety programs, conduct investigations, develop OSHA reporting and worker's compensation claim procedures.
- Collect and maintain safety information and statistics for all Parsons business units and operations, as shown in corporate policy Workplace Health and Safety, Appendix.2, *OSHA Safety and Health Statistics*.
- Keep senior management informed of significant internal and external developments regarding health and safety.

Parsons employees are responsible to:

- Exercise maximum appropriate care and good judgment at all times regarding health and safety, and adhere to safety procedures to prevent accidents and injuries.
- Promptly report all accidents and injuries to supervisory personnel.
- Promptly report any near misses, unsafe conditions, equipment, or practices to supervisory personnel.

Exhibit 1-1 – Parsons Workplace Health and Safety Policy (Cont'd)

CORPORATE POLICY
Workplace Health & Safety

REFERENCES:

National Safety Council Safety and Health Code of Ethics
Parsons Construction Health and Safety Manual
Parsons Injury and Illness Prevention Program (Cal-OSHA IIPP)
Parsons Safety Monthly Reports, Workplace Health and Safety - Appendix.1
Parsons Health and Safety Statistics, Workplace Health and Safety – Appendix 2

DATE: 7/23/04

1.2 THE PROJECT SAFETY PLAN (PSP)

Parsons goal is zero accidents and zero injuries with work tasks designed to minimize or eliminate hazards to personnel, process, equipment, and the general public. No employees should ever perform tasks that may endanger their own safety and health or that of others.

This Project Safety Plan (PSP) outlines safety and health requirements and guidelines developed by Parsons for project work. When implemented, these requirements will help protect site personnel, visitors, and the public from exposure to potential safety and health hazards.

This Plan will be updated as conditions change or situations change, usually by addenda inserted into Appendix A. All Parsons and subcontractor personnel must understand and implement the PSP and any addenda. Parsons documents this by having employees sign an acknowledgement form stating that they understand the plan and its requirements. This PSP should be bound in a three-ring binder so that numbered addenda may be added as needed.

This PSP must be used in conjunction with the Health, Safety, Security, and Environment Plan for Parsons BP Program Site Operations (Program HSSE Plan). Both this PSP and the Program HSSE Plan must be present on site whenever field personnel are conducting work. This PSP provides standard Parsons requirements plus necessary site-specific information. The Program HSSE Plan provides standard BP requirements, and is available on LiveLink at the following address:

https://livelink.parsons.com/livelink/livelink.exe?func=ll&objId=10067634&objAction=browse&sort=name

Additionally a copy of the Program HSSE Plan is provided in the treatment plant office.

1.3 SUBCONTRACTOR SAFETY PLANS

Parsons' subcontractors must establish a safety program for their work and employees. Contract specifications require all subcontractors to accept Parsons PSP, but also prepare their own Subcontractor Safety Plan (SSP) for presentation to Parsons Project Manager and Division Safety Manager at least 10 days before site mobilization. At a minimum, subcontractor safety and health plans must meet the requirements of this PSP and provide safety equipment and safeguards suitable for the hazards involved. This PSP may not cover all potential hazards on the project and subcontractors must ensure that appropriate safety and health information is available for all project tasks. The subcontractors listed below will be directly hired by Parsons.

All PSP requirements for Parsons personnel (e.g., training, substance abuse screening, and incident reporting) also apply to subcontractor personnel and should be spelled out in the subcontractor's safety plan (SSP).

If a subcontractor is performing activities that require specialized training (i.e. confined space entry, excavation/trenching, scaffold use, HAZWOPER, etc.), then copies of training certifications must be provided for applicable employees AND the supervisor.

SUBCONTRACTOR	WORK ACTIVITIES	EVALUATION GRADE
O&M Enterprises (subcontractor) Rick Becken	**Treatment Plant Operations Other O&M**	**C**

SECTION 2 – SCOPE OF WORK

2.1 SCOPE OF WORK

Parsons, in their contracted role with *Atlantic Richfield Company* is providing operations and maintenance activity services for the work as specified in the Contract # GEM-2005-0006 *PETT2005-01 (Project Management, general contracting, monitoring, regulatory consulting.*

Routine operations, maintenance and monitoring (OM&M) includes day-to-day operations of the groundwater treatment plant, normal maintenance of the water recovery and treatment equipment, and collection of weekly SPDES outfall samples. Monthly discharge monitoring reports will be provided to BP for review, signature, and submittal to the NYSDEC.

The following items are typical onsite activities:

- An onsite operator for up to three days per week completing routine treatment plant activities.
- Collection of weekly SPDES outfall samples, and submittal to an analytical laboratory.
- Completion of monthly discharge monitoring report (DMR) and submittal to Atlantic Richfield for review, signature, and submittal.
- Groundwater sampling from monitoring wells.
- Changing bag filters, maintaining treatment system and well pumps, backwashing activated carbon, and other routine maintenance items as required.
- Routine system inspections, grounds maintenance and general upkeep.

For further details regarding the scope of work please refer to the Operations and Maintenance Manual.

2.2 PROJECT SAFETY PLAN APPLICATION

This PSP and referenced documents applies to all locations, facilities, operations, and projects associated with contract work performed by Parsons and its subcontractors. Locations/sites covered under this contract include the former Carborundum Facility in Wheatfield, New York.

SECTION 3 – PROJECT SAFETY MANAGEMENT RESPONSIBILITIES AND AUTHORITY

3.1 SAFETY RESPONSIBILITY MATRIX

Exhibit 3-1 summarizes the responsibilities of selected roles for Parsons Project, Division, GBU and Corporate personnel related to the primary safety activities identified in this PSP.

Exhibit 3-1 – Roles and Responsibilities

	Work Elements	Project Manager	Project Safety Manager	Project Controls Manager	Project HR Manager	Sector Manager	Division Manager	GBU Safety Manager	GBU QC Manager	GBU Risk Manager	GBU President	Corporate Workers Compensation Analyst	Corporate Safety	Resident Engineer/ Superintendent	GBU BD Manager	Parsons CEO/President
	1. Zero Incident Techniques and SHARP Management	X	D	P	P	R	R	R	E	S	E		E	S	S	E
	2. Business Development Phase	X	P	P	P	R	E	S		S	E		E	P	D	E
Startup Phase	3. Initial Hazards Analysis and Planning	X	P	P	P	R	E	R	E	P	E	P		P		
Startup Phase	4. Project Safety Plan (PSP)	X	D		P	R	E	R		R	E		C			E
Startup Phase	5. Stakeholder PSP Alignment Meeting	X	D			E	E	P					C	P		
Administration/ Design Phase	6. Awareness Campaign	X	D	P	P	E	A	R					C	P		
Administration/ Design Phase	7. Employee Orientation	P	P	P	D	R	A	E					C	P		
Administration/ Design Phase	8. Training	X	D	P	P	R	A	E					C			E
Administration/ Design Phase	9. Health and Safety Committee	X	D	P	P	R	A	R					C			
Administration/ Design Phase	10. Incident Investigations	X	P	P	P	R	R	A				P	E			E
Administration/ Design Phase	11. Measurement and Reporting	X	D	P	P	R	R	S				P	E			E
Administration/ Design Phase	12. Audits, Inspections and Record Keeping	X	X	P	P	R	R	S	R	R			E			E
Construction or Field Phase	13. Preconstruction Safety Activities	X	X			E	E	R					C			
Construction or Field Phase	14. Project Site Orientation	X	D	P	P	E	E	S					C			
Construction or Field Phase	15. Meet Local OSHA, Building Trades, and Other Agencies	X	D			E	E	S					C			
Construction or Field Phase	16. Review Contractor/Subcontractor Safety Programs	E	X			E	E	S					C	P		
Construction or Field Phase	17. Subcontractor Premobilization Meeting	X	P	P		E	E	S					C	P		
Construction or Field Phase	18. Risk Mitigation Planning (Two-week Look-ahead)	P	P			E	E	S					E	X		
Construction or Field Phase	19. Activity Hazard Analysis	E	P			E	E	S					E	X		
Construction or Field Phase	20. Recurring Field Safety Meetings/Training	X	D	P	P			S					E	P		
Construction or Field Phase	21. Project Management Site Safety Inspections	X	D					S					E	P		
	Testing, Commissioning, Operations, and Decommissioning Phases	(to be developed)														
Closeout Phase	22. Lessons Learned and Final Safety Report	E	X		X	E	E	S	R				E	P		
Closeout Phase	23. Records Retention	E	X		P	A	A	R					E			

Legend:

A – Approves tools, plans, etc. established by the project.

C – Consultant providing expert advice to the development leader.

D – Development leader tasked to establish the tools, plans, etc. needed for the work element.

E – Sponsor responsible to reinforce the need to comply with the established requirements.

P – Participants in team or group implementation efforts, supporting the implementation leader.

R – Reviews and comments on tools, plans, etc. established by the project to achieve the goal of the work element.

S – Establishes requirements applicable to the project.

X – Accountable and responsible to ensure that the project develops and implements the work element in accordance with established requirements.

SECTION 4 – ADMINISTRATIVE PHASE

4.1 PROJECT SAFETY COMMITTEE

Depending on the size and type of project, a safety committee that includes representation from all project stakeholders shall be formed. If the project has less than five (5) Parsons employees or 25 subcontractors, then a Project Safety Committee will be handled at the Program or Facility level. The Program or Facility H&S Representative is responsible for communicating information from the Division Safety Manager conference call with the project personnel on a monthly basis. Review of the meeting minutes from the Division Safety Manager conference call will take place at times and locations to be determined and posted by the Project Manager on the safety billboard at least one week in advance.

For this project, there will not be a Project Safety Committee.

4.2 PROJECT ORIENTATION

The Project Safety Representative meets with new workers to review site procedures and requirements listed in the PSP Orientation. Topics covered in the PSP orientation include:

- Names of personnel responsible for site safety and health.
- Reporting emergencies, incidents and unsafe conditions.
- Emergency/evacuation plans.
- Safety, health and other hazards at the site.
- Review of all activities on site and related Activity Hazard Analyses (AHAs), which are also refer to as Job Safety Analysis (JSA).
- Proper use of personal protective equipment.
- Work practices by which a worker can minimize risk from hazards.
- Safe use of engineering controls and equipment on site.
- Acute effects of compounds at the site.
- Decontamination procedures.

All personnel, including subcontractors and visitors, on a project must receive a PSP orientation prior to starting work or accessing the site and sign an acknowledgment form indicating they received and understood the orientation. Any individual who is unsure of any information presented in the orientation must request clarification. Individuals who do not participate in the orientation or refuse to sign the acknowledgment cannot work on or access the site.

4.3 AWARENESS CAMPAIGN

The project has established an awareness program consistent with the Parsons safety awareness campaign and its various elements (e.g., signs, posters, banners, and focus briefings). This program promotes worker awareness of safety goals and daily risks, hazards, and exposures in

the field. In addition to topics selected by corporate safety each month, the project will supplement the awareness program with information specifically applicable to the scope of work.

The Project Safety Representative may also provide training, presentations, or informational materials as part of the awareness campaign. *(See SHARP Management Manual Section 6.3 for an example of a typical layout for a Safety Billboard).*

For this project, there will be a field Awareness Campaign. A Safety bulletin board maintained by the Project Safety Representative are primary information points for the project awareness campaign. The Bulletin board is located in the treatment plant office.

4.4 STAKEHOLDER PSP ALIGNMENT MEETING

A stakeholder PSP alignment meeting was held prior to Parsons and the current BP Environmental Business Manager (EBM) involvement in the Site. Parsons and BP continually update and refine the approach and elements of control appropriate to project risks.

4.5 TRAINING

The project has a comprehensive health and safety training program tailored to the scope of work. All employees receive a Project Orientation as outlined in Section 4.2 upon assignment to the project. All Parsons new hires shall receive a facility Employee Orientation within the first 7 days of employment, provided by Human Resources, Facility Manager, Safety Representative and Staff Coordinator or their designee. Depending on the task, scope of work and location of the tasks, specific training topics for this project will include:

- *40-hour HAZWOPER and 8-hour annual HAZWOPER refresher –All personnel engaged in hazardous substance removal or other activities that expose or potentially expose them to hazardous substances or health hazards shall receive appropriate training as required by 29 CFR 1910.120, including, but not limited to, initial 40-hour, 8-hour Supervisor and annual 8-hour refresher training.*
- *CPR/First Aid/AED and bloodborne pathogens – if applicable, reference Section 6.9*
- *Controlled Substance and Alcohol Abuse Awareness (for Supervisors only)*
- *Department of Transportation (DOT) - HM126F*
- *Respiratory Protection*
- *Lockout/Tagout*
- *Confined Space Entry*
- *Forklift Operations*
- *Back Safety – lifting and carrying*
- *Defensive Driving*
- *Fall Protection*
- *Electrical Safety*
- *Stairs & Ladders*

4.6 AUDITS AND INSPECTIONS

The Project Safety Representative has implemented an audit and inspection program in conjunction with the GBU and corporate safety and quality assurance departments. The Project Manager, together with the Project Safety Representative or their designee, conduct a safety inspection each month. Office work areas (including trailers) are audited according to the corporate office audit standard attached below.

Additional information on audits and inspections during field activities is detailed in Section 6.5 of this PSP.

A copy of the BP specific "SAFE" field audit form is included in Appendix C.

4.7 MEETINGS

All project meetings of three or more people must begin with a safety topic. The meeting chairperson may present the safety topic or ask for a volunteer to open the discussion. In general, the "safety moment" is only one or two minutes long and is directly relevant to the work at hand or applicable to most individuals outside the workplace.

Daily toolbox safety meetings are held with all personnel at the beginning of each shift to review current site conditions, incidents or injuries from the previous shift activities, safe or at-risk observations from the previous shift, activities planned for the current shift, anticipated hazards, engineering controls-work practices-PPE to protect against hazards and any additional safety topic or comments. Toolbox safety meetings shall be documented and signed by all individuals accessing the site using a Safety Meeting Sign-In Sheet, shown as Exhibit 7-2

4.8 REPORTING AND MEASUREMENT

4.8.1 Reporting

To accurately measure performance and comply with corporate and regulatory requirements, Parsons utilizes an online safety reporting system to report monthly work hours, near-miss incidents, first aid cases, property damage and personal injuries for its employees and subcontractors. A wallet card containing Incident Reporting Guidelines is also available online and included in Appendix B.

4.8.2 Measurement

The Safety Manager and Project Manager establish and post a measurement system to provide indicators of safety performance, including the following metrics for the project:

- *Project start date*
- *Days without a recordable injury – updated every Monday*
- *Date of last OSHA recordable injury (if applicable)*
- *Percent of safe observations from each monthly audit*

Subcontractors must submit a monthly report of exposure hours (hours worked on the project, paid or unpaid) to the Parsons Project Manager within three (3) days after the end of each month. The Project Manager compiles the figures and submits them to the Program Manager (or via the

online safety reporting system if instructed by the Program Manager) by the first Friday of each month. Where necessary, estimated figures are acceptable. If a project involves air monitoring or personnel wearing any type of respirator, a monthly Field Project Report is also completed and submitted to the Division Safety Manager by the 3rd calendar day after the end of each month.

4.8.3 Incident Notification

Employees involved in or witnessing an incident or near-miss incident must immediately report it to the responsible supervisor or foreman, who in turn immediately relays the report to Parsons Project Manager, Mark Raybuck or George Hermance. Near-miss incidents that could cause significant injury or loss of life must be immediately reported, in the same manner as an actual incident. No supervisor may decline to accept or relay a report of injury or significant near-miss incident from a subordinate.

The Project Manager must ensure that all incidents are reported to the Global Business Unit (GBU) Safety Manager and other management personnel (as required) within four hours. The Project Manager (who has been trained on Parsons' reporting requirements and Online Safety Reporting System) then prepares and submits the incident information.

The GBU Safety Manager or their designee must notify the local OSHA office immediately if an accident involves the death of an employee or hospitalization of three or more workers.

For the BP Program notification involves reporting using the "Traction" system. For further detail regarding incident reporting please refer to **"**Health, Safety, Security, and Environment Plan for Parsons BP Program Site Operations" (Program HSSE Plan).

4.9 INCIDENT INVESTIGATIONS

All incidents and significant near-miss incidents are investigated by an individual or team with training in accident investigation and root cause analysis. Subcontractors (if applicable) must investigate incidents involving their employees or activities and submit an investigation report to the Parsons Project Manager within 48 hours of an incident.

In Parsons, the GBU Safety Manager investigates or assigns an investigator to each significant incident. The investigator submits a final investigation report using the online safety reporting system within 72 hours of the incident. The Project Safety Manager maintains the investigation file.

4.10 RESPONSIBILITY/IDENTIFICATION OF KEY LINE PERSONNEL

A listing of the personnel that have the authority and responsibility for implementing the provisions of the Safety, Health, and Risk Program (SHARP) Management program are provided below.

Project Name/Office:	"Sanborn", Former Carborundum Facility, Wheatfield NY	
Address 2040 Cory Drive:	Wheatfield, NY.	
Telephone	Fax	Email
(716) 731-5322	(716) 731-5424	
Company Executive responsible for project		Contact No. (office)
William Hughes		(216) 486-9005
Project Manager		Contact No.
Mark Raybuck George Hermance		(716) 633 -7074
Site Health & Safety Representative		Contact No.
George Hermance		(716) 633 -7074
Field Team Leader		Contact No.
Dan Lipp		(716) 633 -7074
Client - Project Management		Contact No.
William Barber		see emergency contact list

4.11 MEDICAL REQUIREMENTS AND WORKERS COMPENSATION

In accordance with corporate requirements the Division Safety Manager has established and implemented the following medical requirements for the project:

4.11.1 Medical Surveillance and/or Functional Capacity Exams (FCEs)

All personnel engaged in activities that results in the exposure to chemicals at or above the OSHA Permissible Exposure Limit (PEL) or wear a respirator for more than 30 days in a year, must comply with 29 CFR 1910.120(f) – Medical Surveillance. All personnel who wear a respirator must be medically qualified by a physician, trained and fit-tested on an annual basis, even if they are not required to participate in a medical surveillance program under 29 CFR 1910.120(f).

FCEs are not applicable for this project at this time, nor in the foreseeable future.

4.11.2 Substance Abuse and Alcohol Testing

The Division Safety Manager administers required substance abuse tests, including random drug and alcohol testing. A link to the corporate policy follows:

https://livelink.parsons.com/livelink/livelink.exe/Substance_Abuse.doc?func=doc.Fetch&nodeId=2471927&vernum=6&docTitle=Substance+Abuse%2Edoc

The project/client requires the following types of drug and/or alcohol testing:

- Annual.
- Post-incident – including property damage.
- Reasonable suspicion.

For further details regarding the substance abuse program please refer to the HSSE Program Plan.

4.11.3 Medical Services and Panel of Physicians

The Project Manager in conjunction with the Parsons Workers Compensation Analyst establishes a panel of medical providers for the project and suggests medical facilities to treat non-emergency work-related injuries and illnesses, as follows (note: In New York State the injured worker has the right to see of physician of his/her own choosing, including physicians other than those listed below. The injured worker has the right at any time, to change his/her medical provider. For further details regarding these rights please contact the project manager):

Occupational Health at Niagara Falls
621 10th St
Niagara Falls, NY 14301-1813
(716) 278-4621

Riverfront Medical Services
495 Delaware Ave
Tonawanda, NY 14150-5348
(800) 383-4806

NOTE: Transportation to a medical facility for non-emergencies must be done by at least two (2) individuals (i.e. driver and observer).

4.11.4 Emergency Medical Response

The project shall display posters/signs with emergency telephone numbers and locations of facilities in visible locations and at selected phone locations throughout the project area (including subcontractor facilities). See, "Site Emergency Response Plan" at the beginning of this PSP.

4.11.5 Workers Compensation Program

The Corporate Risk Management department establishes the appropriate workers compensation carrier. If a workers compensation loss occurs, the Corporate Workers Compensation Analyst (Donna Miller, 661-904-0978) handles all communication with the carrier.

This project does not participate in an OCIP or project-specific insurance program. The workers compensation policy covering Parsons employees on this project is as follows:

AIG

New York WC Service center
P.O. Box 2310

Peck Slip Station
New York, NY 10272-2310
(212) 770-0100
1-800-60301785
(212) 770-0101 (fax)
WC policy: WC 716 9963

4.11.6 Medical Monitoring

Based on the activities listed in Section 2.1, the following potential hazards or activities are associated with this project. As a result, medical surveillance will be required as listed below:

Name/Job Classification	Hazard/Activity	Medical Surveillance/Training
Not applicable	Noise –	If noise exposures exceed 85 decibels over an 8-hour time weighted average, an employee must participate in a Hearing Conservation Program.
Not applicable	Chemical exposures –	If an employee is exposed at or above the Permissible Exposure Limit (PEL) of a chemical for more than 30 days in a year, they must participate in a Medical Surveillance Program.
Not applicable.	Respirator use – (list the activities when a respirator will be required)	Medical qualification, training and fit-testing must be received on an annual basis. If a respirator is worn more than 30 days per year, participation in a Medical Surveillance Program is required.

Gregory H. Beck, Safety Manager, (732)537-3502 administers the medical surveillance program.

SECTION 5 – PRE-FIELD WORK PHASE

5.1 RISK ANALYSIS AND SAFETY SPECIFICATION DEVELOPMENT

Procurement procedures require that a site-specific risk analysis be conducted before issuance of investigation and remediation RFPs. Using the pre-bid risk analysis checklist (attached), the Project Manager leads this analysis, which documents existing exposures that may impact the work, surrounding facilities, equipment, workers, or the public at large. The analysis includes locating, documenting, and photographing items such as:

- Overhead and underground power lines
- Sewer and water utilities
- Existing building interferences
- Crane access ways
- Traffic
- Security
- Fences
- Water hazards
- Existing geographical and environmental conditions
- Investigation of Derived Waste (IDW) Disposal
- Confined spaces

Upon completion of the site risk analysis, high-risk activities are listed in the RFPs (as applicable), and bidders must describe controls and mitigation strategies in their proposals. The RFP notes that the list is representative and that the selected contractor must identify and control all work-related hazards.

Pre-field work activities include a detailed analysis of the scope of work and safety specifications in the prime contract, Parsons' project schedule and PSP, draft RFPs, and proposed subcontractor agreements. The Project's standard safety specifications are given below.

- Pre-Field Work Safety Meeting – *See Exhibit 5.1*
- Project Technical and General Conditions Specification Review – *Exhibit 5.2*
- Mobilization/Kickoff Safety Meeting Checklist - Exhibit 5-3
- Site Specific Risk Review Checklist – *Exhibit 5.4*

For further details see Section 6.3 - Job Safety Analysis

5.3 DESIGN AND REMEDIAL ACTION REVIEW

Periodic remedial action reviews are held in accordance with the project management plan. The Project Safety Manager participates in the review to ensure that safety issues are adequately addressed. During the remedial action review, the discussion focuses on how work is sequenced, interferences with continuing operations, and safe work approaches. Specific activity hazards analyses conducted before the scheduled work can mitigate identified/presumed risks.

Remedial action reviews are scheduled as follows:

- Yearly- date TBD.

5.5 PRE-BID MEETING

Pre-bid meetings are required to ensure that bidders understand the RFP, including expectations for safety and health performance. Subcontractors must complete a Parsons Safety Evaluation package as outlined in Section 5.6, prior to attending a pre-bid meeting. During the pre-bid meeting, the Project Manager uses the Pre-Field Work Safety Meeting Checklist (Exhibit 5-1) to review project safety philosophy, principles, and Parsons requirements with all prospective bidders. Although this information is included in the RFP, the meeting reinforces the message.

5.6 CONTRACTOR SAFETY EVALUATION

Project procurement procedures require that all contractors (and their subcontractors) submit prequalification documentation for evaluation. The Procurement Manager or Division Safety Manager conducts the safety evaluation in accordance with the Parsons Contractor Safety Evaluation process and package posted on LiveLink. (Note: All contractors listed in Section 1.3 must be listed on the Contractor Safety Grades spreadsheet posted on LiveLink)

5.7 PRE-FIELD WORK MEETING

The Project Manager holds a pre-field work safety meeting before the subcontractor begins work. The meeting includes subcontractor representatives, contracts manager, and representatives from all disciplines, including safety. During the safety review, the meeting participants review specific safety site/area, pre-bid risk analysis, and competent person and site-specific safety plan requirements. In addition, the Project Manager obtains a safety point of contact and emergency management information. The attached Mobilization/Kickoff Safety Meeting *(Exhibit 5.5)* is used by the Project Manager to document the meeting.

5.8 COMPETENT PERSON SUBMISSION REVIEW

Parsons and its subcontractors must identify OSHA-regulated and certified competent persons for work or tasks requiring that level of supervision. The Parsons personnel listed below will be assigned to the project and have the designated certifications.

Name	Job Title	40-hr HAZWOPER	8-hr HAZWOPER Supervisor	8-hr HAZWOPER Expires	Other Training (i.e. excavation, confined space)
Daniel Lipp	Technician	1/27/94	6/28/05	5/31/07	Department of Transportation (3/5/02), Excavation and Trenching (3/29/04), Confined space (10/22/95). Fork Lift Training
Sara M. Chmura	Geologist	May 17, 2002	April 28, 2005	April 30, 2007	Excavation Competent Person, CPR/First Aid, Defensive Driver Training,
James Schuetz	Sr. Geologist	March 21, 2002	November 1, 2002	April 30, 2007	Excavation Competent Person, CPR/First Aid
Michael Billi	Sr. Designer	8/29/03	"Not applicable"	4/30/07	Excavation Competent Person 3/29/04
Rick Becken	Treatment Plant Operator	1991		7/15/2007	CPR/First Aid, Fork lift training

Exhibit 5-1 – Standard Pre-Field Work Safety Meeting Checklist

PARSONS

Pre-Field Work Safety Meeting

Date:		Project/Location:	
Subcontractor Representative:		Parsons Project Manager:	
Phone:		Phone:	
Subcontractor Safety Rep:		Parsons Safety Manager:	
Phone:		Phone:	

The following items were identified and reviewed with the subcontractor.

Health & Safety		Medical	
Site-Specific Safety Plans/Model Program		Substance Abuse Screening	
Competent/Qualified Person Documentation		Emergency Procedures	
Safety Audits/Inspections		Site Security	
Subcontractor Responsibilities		Smoking Policy	
Site Orientation Requirements		Medical Services Requirements	
Mobilization/Kickoff Safety Meeting/Date		Treatment Locations/Addresses/Phone List	
Crane Inspection Certification		Other	
Personal Protective Equipment (PPE)			
Environmental Hazards			
Other			

Additional Notes/Comments:

Exhibit 5-2 – Project Technical and General Conditions Specification Review

Date: Project/Location:

Project Manager: Safety Manager:

The project specification review has revealed the following high-risk activities. Activities checked must be followed up during the construction phase with training, written plans and/or a specific Activity Hazard Analysis. This list should be reviewed with prospective bidders during the pre-bid meeting.

Steel Erection (SENRAC Requirements)		Demolition	
Excavations/Trenching		Marine Work/Liveboating	
Powered Industrial Trucks, Fork Lifts		Heavy Hauling	
Crane Work/Heavy Lifts, Rigging		Concrete	
Work Involving Hazardous Materials		Diving	
Electrical Tie-ins/Lockout–Tagout		Work Adjacent to Production Areas	
Aerial Lift Work – scissor lifts, extendable boom, etc.		Site Security/Visitor Control/Public Exposure	
Underground, Caissons, Cofferdams		Process Safety Management (PSM)	
Scaffold Erection/Work		Permits (Excavation/Scaffolding/Demolition/Traffic/Confined Space/Hot Work/Line breaking, etc.)	

High Risk Activities and Other Project Concerns:

5.9 Subcontractor Safety Plan (SSP) Submission Review

All subcontractors must submit safety programs to the Parsons Project Manager and Division Safety Manager for review before they begin work on site. The Plan will be reviewed for adequacy in accordance with the SSP template (posted on LiveLink).

5.9.1 Contractor Site-Specific Safety Plans

At least 10 days before work begins, each contractor must submit two copies of its subcontractor safety program (SSP) to the Parsons Project Manager and Division Safety Manager for review. The Project Manager and Division Safety Manager review the SSP to ensure that it meets Parsons' requirements.

If a contractor needs assistance developing an SSP, an electronic copy of Parsons' HAZWOPER Model SSP template is posted on LiveLink.

The SSP must address the following elements:

- Responsibility
- Compliance
- Communication
- Hazard assessment
- Accident exposure and investigation
- Hazard correction
- Training and instruction
- Recordkeeping

The SSP must include applicable requirements of Parsons PSP and OSHA CFR 1910/1926:

- Scope of work evaluation that describes the sequence of work and associated hazardous activities.
- Specific activity hazards analysis (AHA).
- A project site employee orientation program that addresses location specific issues relative to safety and health.
- A site-specific emergency action plan that includes a list of key management contacts with home office, project site, home, and cellular telephone numbers.
- A site-specific medical emergency plan that lists qualified first aid personnel by name and includes copies of their current certificates.
- Key line management personnel, by name and position, who will enforce the SSP.
- Key competent or qualified personnel by name and copy of current documentation identifying specific certified competency (e.g., scaffolding, excavations, and fall protection).
- Written progressive disciplinary program for violations of safety procedures.
- Trenching and shoring plan (if applicable).
- HAZWOPER training documentation (if applicable).
- Contractor task hazard planning.

- Subcontractor weekly safety planning submission.
- Contractor workers daily task safety planning.

5.10 MOBILIZATION/KICKOFF SAFETY MEETING

Project Managers conduct the Mobilization/Kickoff Safety Meeting on the first day of subcontractor mobilization in the field and at the work site. *(See SHARP Management Manual Section 17 for additional details.)* Exhibit 5-3 shows the checklist used for the safety portion of this meeting. The meeting includes the completion of a Site-Specific Risk Review Checklist *(Exhibit 5.4)* combined with a walkthrough of the work area to locate items on the pre-bid risk analysis checklist.

Exhibit 5-3 – Mobilization/Kickoff Safety Meeting Checklist

PARSONS

Mobilization/Kickoff Safety Meeting

Date: _____ Project/Location: _____

Parsons Representative: _____Subcontractor Representative: _____

The following project site safety, health and security requirements, procedures, and hazards have been identified and reviewed with the Subcontractor.

SSP/Emergency Planning/Response Plan			Demolition	
Competent/Qualified Person			Personal Protective Equipment	
Hazardous Materials/Waste			Cranes/Hoists/Annual Inspection Certificate	
Vehicle/Heavy Equipment			Overhead Power Lines	
Lockout/Tagout			Confined Spaces (Permit/Non-Permit)	
Electrical			Excavations/Trenching	
Fire Protection			Site Security/Visitor Control/Public Exposure	
Hot Work/Welding/Cutting			Process Safety Management (PSM)	
Fall Protection/Guardrails/ Scaffolding/Ladders			Permits (Excavation/Scaffolding/Demolition/Traffic/ Confined Space/etc.)	

Additional Project Concerns:

_____

_____

_____

_____

_____

Other Attendees:

Name	Title	Company

Exhibit 5-4 – Site Specific Review Checklist

PARSONS

Site Specific Risk Review Checklist

Date:_____ Project or Location:_____

Risk/Hazard	Detail	Present
Employee Exposure	Hazardous chemicals	_____
	Lead	_____
	Asbestos	_____
	UXO	_____
	PCB	_____
	Airborne contaminants (dust, mists, fumes)	_____
	Other (specify)	_____
	_____	_____
Confined Space	Confined space entry is required	_____
	_____	_____
Control of Energy	Lockout, blocking, other controls required	_____
	_____	_____
Hazardous Waste	Handling, removal or storage of hazardous is required	_____
	_____	_____
Crane Work	Mobile cranes	_____
	Tandem lifts	_____
	Bridge cranes	_____
	Derricks	_____
	_____	_____
Trenching and Excavations	Trenching and excavations required	_____
	_____	_____
Welding and Cutting	Acetylene/gas cutting	_____
	Arc welding	_____
	Soldering and brazing	_____
	_____	_____
Powered Industrial Trucks	Forklift training is required	_____
Aerial Lifts	Hydraulic booms	_____
	Scissor lifts	_____
	Mobile scaffolding	_____
	_____	_____
Scaffolding	Scaffolding is required	_____
	_____	_____

Risk/Hazard	Detail	Present
Ladders	Portable ladder use is required	_____
	_____	_____
Caissons and Cofferdams	Caisson or cofferdam work is required	_____
	_____	_____
Marine or Over Water Work	Work on or over water is required	_____
	Underwater (diving) work is required	_____
	_____	_____
Process Safety Management	Work is on or near operations involving listed highly hazardous chemicals	_____
	_____	_____
Steel Erection	Steel erection work is required	_____
	_____	_____
Traffic Control	Work is on or near highways, road, or mass transit	_____
	_____	_____
Personal Protective Equipment	Work activities or work site requires hearing protection	_____
	Work activities or location requires using respirators	_____
	Work activities or location requires special protective clothing	_____
	_____	_____
Public Exposure	Work activities or location requires special precautions to protect the public	
	_____	_____
Other Exposures	Other exposure or high-risk activities (list)	
	_____	_____
	_____	_____
	_____	_____
	_____	_____

Notes: _____

Reviewed by: _____ Title: _____ Date: _____

SECTION 6 – REMEDIATION PHASE

6.1 SITE RISK ANALYSIS

Before work begins, Project Managers lead a team that performs a risk analysis at each work site to identify hazards that require specific control measures. During weekly progress meetings, the Project Engineer and subcontractors submit written summaries of upcoming work tasks and associated risks and control measures to the Project Manager using *Exhibit 6.1*. The weekly summaries identify upcoming mobilization or demobilizations tasks, audits and inspections, competent person changes, training and new activities requiring an Activity Hazard Analysis (AHA) which are know in the BP program Job Safety Analysis (JSA). Subcontractors add activities to these summaries at least two weeks in advance of the work. Potential hazards are listed below.

6.1.1 CHEMICAL HAZARDS

Health hazards and the exposure limits associated with chemicals of concern are presented in Table 6.1. These hazards can be encountered during work activities. Based on previous investigation and sediment sampling, monitoring will be conducted in the workers breathing zone using a photoionization detector during intrusive activities.

TABLE 6.1

08/14/00

Compound	PEL [a/] / TLV [b/] (ppm) 1	IDLH [c/] (ppm)	Threshold[d/] (ppm)	Ionization Potential[e/] (eV)	Physical Description/Health Effects/Symptoms
1,2-Dichloroethene (DCE) (cis- and trans-isomers)	200	1,000	0.085-500	9.65	Colorless liquid (usually a mixture of cis- and trans- isomers), with a slightly acrid, chloroform-like odor. Irritates eyes and respiratory system. CNS depressant. Cis- isomer is a mutagen.
Trichloroethene (TCE)	50	1,000	21.4-400	9.45	Clear, colorless or blue liquid with chloroform-like odor. Irritates skin and eyes. Causes fatigue, giddiness, headaches, vertigo, visual disturbances, tremors, nausea, vomiting, drowsiness, dermatitis, skin tingling, cardiac arrhythmia, and liver injury. In animals, causes liver and kidney cancer. Mutagen, experimental teratogen, and carcinogen.
Vinyl Chloride	1 STEL = 5 (29 CFR 1910.1017) [dd/]	NA	260	9.99	Colorless gas (liquid<7°F) with a pleasant odor at high concentrations. Severe irritant to skin, eyes, and mucous membranes. Causes weakness, abdominal pain, gastrointestinal bleeding, enlarged liver, pallor or blue skin on the extremities, liver cancer, and frostbite (liquid). Also attacks lymphatic system. Mutagen, experimental teratogen, and carcinogen.

1: PEL and TLV value are the same
2: Operations will cease when action level is reached.
d/ When a range is given, use the highest concentration.
in the *NIOSH Pocket Guide to Chemical Hazards*, June 1997.
h/ NA = Not available.
dd/ Refer to expanded rules for this compound.

6.1.2 PHYSICAL HAZARDS

Physical hazards that may be encountered but are not limited to heat stress, cold-related illness, ultra-violet radiation and noise hazards.

Heat Stress:

Heat stress is one of the most common (and potentially serious) illnesses that affect field personnel. When site personnel are engaged in operations involving hot environments, a number of physiological responses can occur which may seriously affect the health and safety of the workers. Heat stress can result in health effects ranging from transient heat fatigue to serious illness or death. Heat stress can be eliminated or controlled through the use of a comprehensive heat stress prevention and monitoring program.

Cold-Related Illness:

Cold-related illness, like heat stress, is very common and can seriously affect field personnel if the appropriate controls are not established. Exposure to low temperatures presents a risk to employee safety and health, in the form of hypothermia and frostbite. Both can be controlled or eliminated by implementing employee training, periodic physiological screening, establishment of administrative controls, selecting proper work clothing, and wind-chill monitoring which all contribute to the prevention of hypothermia and frostbite.

Ultraviolet Radiation:

The sun emits ultraviolet radiation (UV) as heat and light. The skin's natural defense mechanisms attempt to reject the UV by distributing melanin pigmentation where needed. However, overexposure to direct sunlight can cause inflammation or blistering of the skin (sunburn). The use of sunscreen, long sleeve shirts, and wide brim hats can help prevent sunburn. Chronic exposure to UV radiation is known to cause skin cancer. In case of sunburn, do not apply burn ointment, cold cream, or butter to relieve pain. Use a dry dressing and get medical attention for severe, extensive sunburns.

Noise:

Operating heavy equipment can be a potential noise source. Hearing protection will be worn by personnel operating heavy equipment, or other personnel in close proximity to the equipment. If noise hazards are of concern for a particular project, appropriate hearing protection should be used.

6.1.3 BIOLOGICAL HAZARDS

Biological hazards can result from encounters with mammals, insects, snakes, spiders, ticks, plants, parasites, and pathogens. Mammals can bite or scratch when cornered or surprised. The bite or scratch can result in local infection or infection with systemic pathogens or parasites. Insect and spider bites can result in severe allergic reactions in sensitive individuals. Exposure to poison ivy, poison oak or poison sumac results in skin rash. Ticks carry a number of serious diseases. Dead animals, organic wastes, and contaminated soil and water can harbor parasites and pathogens. Most of the field activities will occur out on the Lake; however, there may be the possibility to encounter biological hazards surrounding the shoreline.

Poison Ivy:

Some of the most common and severe allergic reactions result from contact with poison ivy, poison oak, and poison sumac. Contact with the poisonous sap of these plants produces a severe rash characterized by redness, blisters, swelling, and intense burning and itching. The victim also may develop a high fever and may be very ill. Ordinarily, the rash begins within a few hours after exposure, but it may be delayed for 24 to 48 hours.

Ticks:

Ticks may be common during the spring and summer in the high grass areas on the Site. Two types of ticks may be encountered: the dog tick and the deer tick. The dog tick is the larger, more common tick. After biting, the dog tick will remain attached to the victim until engorged with blood. Dog ticks may transmit rocky mountain spotted fever and other diseases. The deer tick is much smaller, ranging from poppy seed to grape seed size, and does not remain attached to the skin for very long after biting. Deer ticks can transmit Lyme disease, which can have serious, long-term health effects if left untreated. Lyme disease is characterized by a bulls-eye type rash; light in the center with an outer red area. Flu-like symptoms may also occur. These signs may occur at different times and the rash may not appear. If you discover any bites on the skin, wash the affected area and seek medical attention if a rash or flu-like symptoms appear.

Bees, Wasps, Hornets, and Other Insects:

Symptoms of an insect bite are normally a sharp, immediate pain in the body part bitten. The following poisonous insects and insect-like creatures may be encountered:

- Bees (honeybees, bumble bees, wasps, and hornets);
- Caterpillars; and
- Beetles/Bugs

Spiders:

The two poisonous spiders that may be encountered are the Brown Recluse and the Black Widow. The Brown Recluse is up to one inch long with a violin or "fiddle" shaped mark on the top of the head. The Black Widow is a smaller, bulbous black spider with a red hourglass-shaped mark on the underside.

Reactions to a Brown Recluse spider bite include mild to severe pain within two to eight hours and a star shaped area around the bite within three to four days. Significant tissue death and loss accompanies a Brown Recluse spider bite. Reactions to a Black Widow spider include intense pain at the site of the bite after approximately 15 to 60 minutes, followed by profuse sweating, rigid abdominal muscles, muscle spasms, breathing difficulty, slurred speech, poor coordination, dilated pupils, and generalized swelling of face and extremities.

Persons that have been bitten by a Brown Recluse or Black Widow spider should be immediately transported to a hospital. The spider should be collected (if possible) for confirmation of the species.

Blood borne Pathogens:

Blood borne pathogens enter the human body and blood circulation system through punctures, cuts or abrasions of the skin or mucous membranes. They are not transmitted through

ingestion (swallowing), through the lungs (breathing), or by contact with whole, healthy skin. However, under the principle of universal precautions, all blood should be considered infectious, and all skin and mucous membranes should be considered to have possible points of entry for pathogens.

6.1.4 ENVIRONMENTAL HAZARDS

Slip, Trip, and Fall Hazards:

The site may contain slip, trip, and fall hazards for site workers, such as:

- Holes, pits, tree roots, or ditches.
- Slippery surfaces.
- Steep grades.
- Uneven grades.
- Sharp objects, such as nails, metal shards, and broken glass.

Wet conditions may contribute to the possibility for field personnel to trip or slip and either injure themselves or fall.

Thunderstorm Hazards:

During the course of field operations, severe weather may be encountered, including thunderstorms, lightning, rainstorms, and other unsafe weather conditions (i.e., high winds and tornadoes). Criteria indicating that severe weather conditions may exist include:

- High winds (greater than 40 miles per hour – depending on the tree cover and other site specific conditions);
- Tornado watch or warning in place for the area including the site;
- Audible Thunder or Visible lightning;
- Extreme temperatures (e.g., greater than 100 degrees F); or
- Heavy rainfall that makes footing treacherous and visibility difficult.

If severe weather is approaching, while conducting outside activities, personnel will stop all work and move indoors. If thunder is heard move indoors.

6.1.5 FIRE HAZARDS

Although fires and explosions may arise spontaneously, they are more commonly the result of carelessness during the conduct of site activities, such as moving drums, mixing/bulking of site chemicals and during refueling of heavy or hand held equipment. Some potential causes of explosions and fires include:

- Mixing of incompatible chemicals, which cause reactions that spontaneously ignite due to the production of both flammable vapors and heat;
- Ignition of explosive or flammable chemical gases or vapors by external ignition sources;
- Ignition of materials due to oxygen enrichment;
- Agitation of shock or friction-sensitive compounds;

- Sudden release of materials under pressure.

- *Chemical exposures – include Hazardous Substances of Concern table, etc.*
- *Environmental – cold/heat stress, animals, insects, poisonous plants/vegetation*
- *Falls – working at heights greater than six feet*
- *Hazardous material handling*
- *Heavy equipment operation*
- *Overhead and underground electrical*
- *Traffic*

6.2 FIVE HAZARD CONTROL MEASURES – ORDER OF PRECEDENCE

Site hazards and hazards resulting from investigation and remediation activities are controlled using one or more of the control measures listed below. The order of precedence is as follows:

1. **Engineer/design to eliminate or minimize hazards.** A major component of the design phase is to select appropriate safety features to eliminate a hazard and render it fail-safe or provide redundancy using backup components.

   To reduce the spread of hazardous materials by workers from the contaminated areas to the clean areas, work zones will be delineated at the site. The flow of personnel between the zones will be controlled. The establishment of the work zones will help ensure that personnel are properly protected against the hazards present where they are working, work activities and contamination are confined to the appropriate areas, and personnel can be located and evacuated in an emergency.

EXCLUSION ZONE

If necessary, exclusion zones will be established at the site for all drilling and excavation activities; unprotected onlookers should be located 50 feet upwind of drilling, excavation or soil sampling activities. In the event that volatile organics are detected in the breathing zone as discussed in Section 6.1, all personnel within the exclusion zone must don Level C protection. Exclusion zones will also be established during any activity when Level C protection is established as a result of conditions discussed in Section 6.1.
All personnel within the exclusion zone will be required to use the specified level of protection. No food, drink, or smoking will be allowed in the exclusion or decontamination zones. Contact lenses and cosmetics are not permitted on-site.

DECONTAMINATION ZONE

Should it be necessary to establish an exclusion zone, a decontamination zone will be utilized. This zone will be established between the exclusion zone and the support zone, and will include the personnel and equipment necessary for decontamination of equipment and personnel (discussed below). Personnel and equipment in the exclusion zone must pass through this zone before entering the support zone. This zone should always be located upwind of the exclusion zone.

SUPPORT ZONE

The support zone will include the remaining areas of the job site. Break areas, operational direction and support facilities (to include supplies, equipment storage and maintenance areas) will be located in this area. No equipment or personnel will be permitted to enter the support zone from the exclusion zone without passing through the personnel or equipment decontamination station. Eating, smoking, and drinking will be allowed only in this area.

2. **Guard the hazard.** Hazards that cannot be eliminated by design must be reduced to an acceptable risk level by safety guards or isolation devices that render them inactive.

3. **Provide warnings.** Hazards that cannot be totally eliminated by design or guarding are controlled through using a warning or alarm device.

   Appropriate warning signage is located in the field and the treatment plant.

4. **Provide special procedures or training.** When design, guarding, or warnings cannot eliminate hazards, subcontractors must develop procedures, training, and audits to ensure safe completion of work. Training cannot be a substitute for hazard elimination when life-threatening hazards are present.

   All personnel are trained for their appropriate activity. Job Safety Analysis (JSAs), also referred to as Activity Hazard Analysis (AHA) are complete for each task. Appendix A is a complete list of JSAs. If a task is not covered in one the current JSA a new JSA will be written.

   Prior to each days field activity appropriate BP's Control of Work policies will be implemented. Appendix C contains details regarding Control of Work. These procedures include Authorization to Work (ATW) forms and permits.

5. **Provide personal protective equipment.** To protect workers from injury, the last method in the order of precedence is the use of personal protective equipment, such as hard hats, gloves, eye protection, life jackets, and other protective equipment with the understanding that bulky, cumbersome, and heavy personal protective equipment is often discarded or not used, rendering this method ineffective without proper controls.

Level D

Level D protection will be worn for initial entry on-site and initially for all activities. Level D protection will consist of:

- Standard Work Clothes including long sleeve shirts.
- Safety boots with steel-toes.
- Nitrile outer and PVC or nitrile inner gloves must be worn during all sampling activities. Strong work gloves must be worn during all general work activities.
- Hard hat must be worn at all times.

- Hearing protection as necessary.
- Safety goggles or safety glasses must be worn all of the times.
- Reflective clothing must be worn at all time while working outside the treatment plant.

LEVEL C

The level of personal protection will be upgraded to Level C if the concentration of volatile organic compounds that can be detected with the PID or the FID in the breathing zone equals or exceeds 5 ppm.
Level C protection will consist of Level D equipment and the following additional equipment:

- Full-face air-purifying respirator.
- Combination dust/organic vapor cartridges.
- Tyvek coverall suit.
- PVC or Nitrile inner and Nitrile outer gloves.

If the concentration of volatile organics which can be detected with a PID and FID equals or exceeds 5 ppm, all field personnel will immediately retreat from the area and consult with the Office Health and Safety Officer. Level C is not expected to be worn.

OSHA REQUIREMENTS FOR PERSONAL PROTECTIVE EQUIPMENT

All personal protective equipment used during the course of the Operations, Maintenance, and Monitoring must meet the following OSHA standards:

Type of Protection	Regulation	Source	
Eye and Face	29 CFR 1910.133	ANSI Z87.1-1968	
Respiratory	29 CFR 1910.134	ANSI Z88.1-1980	
Head	29 CFR 1910.135	ANSI Z89.1-1969	
Foot	29 CFR 1910.136	ANSI Z41.1-1967	

ANSI = American National Standards Institute

All individuals wearing a respirator must be fit-tested prior to use in accordance with OSHA regulations (29 CFR 1910.1025; 29 CFR 1910.134).
Air purifying respirators cannot be worn under the following conditions:

- Oxygen deficiency
- IDLH concentrations
- High relative humidity
- If contaminant levels exceed designated use concentrations.

Note: If respiratory protection is used the appropriate respirator usage log(s) must be completed and returned to the Office Health and Safety Officer (Appendix B)

6.3 ACTIVITY HAZARDS ANALYSIS – JOB SAFETY ANALYSIS (JSA)

Parsons and its subcontractors are required to conduct an activity hazards analysis, also call Job Safety Analysis (JSA) for all aspects of the work. The activity hazards analyses consist of the following three steps:

- Identify the task and break it down into steps.
- Identify the hazards associated with each step.
- Identify the specific hazard control measure used for each step in accordance with the order-of-precedence method of control.

The complete versions of JSAs for the Site are in Appendix A

Additionally, the US Army Corps of Engineers website www.swl.usace.army.mil/safety/asaindex.html contains a library of sample AHAs that may be useful on projects. The Parsons PWeb should also be checked for AHAs and JSAs. The Project Managers may use uses the following list as a guide in determining the investigation and remediation activity hazards analyses for various high-hazard operations and critical tasks.

- **Confined Spaces.** Confined space work requires special consideration, evaluation, controls and applicable training for the entrant, attendant, supervisor and rescue personnel. Each space should be reviewed for regulatory compliance.
- **Crane Operations.** Consider special requirements for operations, maintenance, and heavy lifting operation. All lifts must be planned in accordance with the limitations of cranes being used. Critical lift plans are required when two cranes are used

simultaneously. Crane operator certification is required when the boom length exceeds 100 feet.

- **Fall Protection.** Fall protection is required when employees are working more than six (6) feet above the normal work surface level. Consider how and where ladders, scaffold, work platforms, or lifts (including scissors or aerial lifts), roofing work and leading edges are used. Evaluate protective measures such as fall protection plans, use of personal fall arrest systems, and the work surfaces for slip and fall hazards and protection.
- **Field Activities.** Many different types of activities occur in the field from excavations, groundwater sampling, soil sampling, liner installation, well installation and monitoring, and pump tests. A variety of hazards could be incurred with each activity such as biological, slip/trips/falls and lacerations. An activity hazard analysis is required for each different field activity to identify the hazards and controls.
- **Field Visit.** When a field visit occurs, it may be before any field activities are taking place. However, there may still be hazards present such as walking or driving in fields with uneven terrain, poisonous vegetation, etc. Although personal protective equipment such as a hard hat and safety glasses may not be needed, sturdy work boots, long pants, long sleeve shirts and sunscreen may be necessary.
- **Heavy Equipment Operation.** Evaluate the use of heavy equipment in operations such as site clearing, grading, drilling and excavation or lifting. Controls should include equipment alarms, use of qualified operators, equipment inspections, and any specific OSHA regulatory requirements.
- **Material Handling.** Consider the size and weight of loads, the equipment to be used, how the equipment is set up and protected, and safety and maintenance inspections of material handling and rigging equipment. Also consider employee training in the use of the equipment or personal body mechanics when engaged in manual material handling activities.
- **Material Storage.** Consider where materials and equipment will be stored on site. Implement measures to protect against chemical spills/releases, fire, vandalism and theft of tools, equipment, or materials. Also consider the hazards that may exist for workers when they are storing or retrieving those materials.
- **Mobilization/Demobilization.** Conduct an initial site inspection for pre-job planning. The inspection should cover potential exposures such as the location of electrical lines, underground utilities, nearby structures, traffic conditions, site security needs, public exposures general liability, and other potential exposures.
- **Portable Hand and Power Tools.** Evaluate the tools to be used and the ways that workers are protected from the hazards associated with the use of tools. Consider tool maintenance requirements; electrical requirements; the use of ground fault circuit interrupters, grounding, extension cords, and tool inspection procedures; and employee training and PPE requirements.
- **Process Safety Management.** At process sites where highly hazardous chemicals are stored or used, comply with special considerations and process safety management OSHA regulations.

- **Traffic Controls.** Control measures include warning signs, flagmen, traffic stoppage and control, and unloading procedures. Internal traffic control plans should include ways to restrict the number of vehicles on site, the flow of vehicles accessing the site and driving through the site, haul roads, speed controls, subcontractor employee parking areas, merging of site traffic with local vehicle traffic, pedestrian controls in traffic zones, access by emergency and rescue vehicles and operator controls.
- **Vehicle Operation.** Although driving a vehicle may be second nature to many individuals, there are many hazards and controls that need to be identified. Fatigue and distractions are two hazards that many individuals do not think about on a regular basis. Operating off-road vehicles such as an All-Terrain Vehicle (ATV) also require training.

Exhibit 6-1 is a sample Job Safety Analysis (JSA) form. Exhibit 6-2 shows a training record to be completed and kept on file for each activity hazards analysis.

Job Safety Analysis Worksheet

Contractor:		Date:	JSA No:
Supervisor:		PERMIT TO WORK N	BP Permit No:
Location of worksite:		JSA team members:	Name / Initials / Name / Initials
DESCRIPTION OF WORK:			

ACTIVITY	HAZARDS	RISK CONTROL MEASURES	WHO IS RESPONSIBLE?
List the tasks required to perform the activity in the sequence they are carried out.	Against each task list the hazards that could cause injury when the task is performed.	List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.	Write the name of the person responsible (supervisor or above) to implement the control measure identified.

Exhibit 6-2

PARSONS

Job Safety Analysis Training Record

JOB NUMBER_____

AHA NUMBER_____

JOB LOCATION_____

DATE:_____

NAME OF TRAINER:_____

SUBJECTS COVERED:_____

_____

_____

_____

TRAINING AIDS USED:_____

_____

_____

ATTENDEES (PLEASE SIGN NAME LEGIBLY):

_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

(Use additional sheets if necessary)

6.4 SAFETY SYSTEMS ANALYSIS

GBU Safety Managers use the safety systems analysis for field staff and subcontractors whose work requires that they be on site for over six months. The analysis provides management with a rating that reflects the safety and health program effectiveness. Appendix B1 to the SHARP Management manual provides the program, protocol, and methodology.

6.5 REMEDIATION SITE INSPECTION

The remediation site inspection is a protocol designed to identify and correct unsafe acts and conditions, as well as recognize safe work practices and accomplishments, in Parsons or subcontractors' scope of work. The Project Manager or Project Safety Manager should develop standard safety checklists appropriate to the work being performed. *Exhibit 6.3* is an example of a simple checklist to evaluate a project's status. Additionally a copy of the BP specific "SAFE" audit form is located in Appendix C.

Inspections involve a daily or weekly walkaround of a project site that focuses on safety. The Project Manager or Project Engineer responsible for the work conduct inspections, accompanied by the Project Safety Manager as necessary. Daily walkarounds do not have to be documented, but once a week the Project Manager prepares an inspection report using *Exhibit 6.3* and forwards it to the Project Safety Manager for maintaining in the project file. Items found to be out of compliance must be assigned to the responsible party for corrective action and the corrective action tracked to completion. Subcontractors shall be advised of noncompliance items using a Notice of Subcontractor Violation, included as *Exhibit 6.4*.

6.6 DAILY SITE WALK CHECKLIST

Depending on the scope of work, type of activities (i.e. low risk versus high risk) and duration of the project, the Project Manager or their designee shall conduct a daily safety site walk using the Remediation Safety and Health Inspection Checklist in Exhibit 6-3 to identify problem areas. Items found to be out of compliance must be assigned corrective action and the corrective action tracked to completion.

Exhibit 6-3: Remediation Safety and Health Inspection Checklist
Project: _____ Date: __
Inspector: _____ Time: __

Any items that have been found deficient must be corrected before work or use.This checklist includes, but is not limited to, the following:

	Yes	*No*
Safe Access and Workspace		
Are safe access and adequate space for movement available for:		
Emergencies		
Work area		
Walkways and passageways		
Are ladders, stairways, and elevators properly located and functioning?		
Is protection provided for excavations and trenches?		
Is overhead protection provided for all areas of exposure?		
Is lighting adequate?		
Planning Work for Safety		
Are employees provided with all required personal protective equipment (PPE)?		
Have other contractors and trades been coordinated with to prevent congestion and avoid hazards?		
Is air monitoring necessary to determine whether any chemical exposure exists?		
Utilities and Services Identification		
Has the Parsons Drilling Protocol been followed?		
Have all utilities been identified by signs/markout?		
Have high voltage lines been moved or de-energized, or barriers erected to prevent employee contact?		
Sanitary Facilities		
Is drinking water available?		
Are toilet facilities adequate?		
Work Procedures – Materials Handling		
Is material handling space adequate?		
Is material handling equipment adequate and proper?		
Is material handling equipment in good condition?		
Are workers properly trained to operate equipment and handle hazardous materials?		

Comments:

6.7 SAFETY AND HEALTH ENFORCEMENT

Parsons and its subcontractors enforce all applicable requirements of OSHA 1910 and 1926 as well as EM 385.1, where applicable. In addition, subcontractors must comply with and enforce Parsons site requirements.

Parsons and its subcontractors have written progressive disciplinary systems available for review in the respective Human Resources departments.

6.8 NOTICE OF VIOLATION OF SAFETY AND HEALTH REGULATIONS

The project has a formal notice of subcontractor violation of safety and health regulations program to ensure that violations are issued in an immediately dangerous to life and health (IDLH) situation or when the subcontractor repeatedly fails to comply with safety and health requirements.

The notice (Exhibit 6-4) documents poor performance and requires a response from subcontractor senior management. The notice contains five distinct levels of discipline, from submission of a recovery plan to contract termination.

6.9 COMPETENT FIRST AID PERSON

The OSHA Regulations (29 CFR 1910.151 and 1926.50) state the employer shall ensure the ready availability of medical personnel for advice and consultation on matters of occupational health. In the absence of an infirmary, clinic, hospital, or physician, that is reasonably accessible in terms of time and distance to the worksite (i.e. 4 minutes for activities that can be expected to result in an accident involving suffocation, severe bleeding, or other life threatening or permanently disabling injury or illness and 15 minutes for other types of injuries), which is available for the treatment of injured employees, a person who has a valid certificate in first-aid training from the U.S. Bureau of Mines, the American Red Cross, or equivalent training that can be verified by documentary evidence, shall be available at the worksite to render first aid. First-aid supplies must be accessible for immediate use and be of sufficient size and number to handle common first aid incidents.

Currently, the Client (BP) requires at least one person onsite to be trained in CPR. The list below includes the name of trained individuals.

EMPLOYEE NAME	FACILITY LOCATION	CPR EXP.	FA EXP.
Jim Schuetz	Williamsville	4/2008	8/5/2008
Sara Chmura	Williamsville	3/2008	4/30/2007

Exhibit 6-4 – Notice of Subcontractor Violation of Safety and Health Regulations

PARSONS

Notice of Subcontractor Violation of Safety and Health Regulations

Date: _____

Contractor Name: _____
Address: _____

_____

_____

Attention: _____

This letter officially notifies you that you have been found to be in violation of the following Safety Regulations:

_____

on (date) _____, by _____.

Confined Space Entry	___	Lockout/Tagout	___	Hot Work	___	Personal Protective Equipment	___
Knowledge of the environment	___	Awareness of warning alarms	___	Evacuation routes	___	Back-up Alarms	___
Assembly locations	___	Fall Protection	___	Scaffolding	___	Environmental/Hazardous Material Storage	___
Trenching	___	Safe Work Practices	___	Security Practices	___		

Other: _____

_____

_____

This/These violations occurred at the following locations: _____

_____

at the following times _____ and dates _____

The name of the employees was/were _____

under the supervision of _____.

Notice of Noncompliance with Safety and Health Regulations

Under conditions of this enforcement procedure check all items that apply:

_____ 1. You are being notified of this violation and should take corrective action to prevent a reoccurrence. The corrective action shall be documented to the Parsons Construction Management representative immediately.

_____ 2. You must submit a plan for compliance to your Parsons Construction Management representative and the Construction Safety Manager within two days of receipt of this letter. The compliance plan must include the means or methods of compliance and the date that the requirements for compliance will be completed. Once compliance has been achieved, a follow up letter must be sent to the Parsons Construction Management representative and Construction Safety Manager. Failure to comply will result in disciplinary action against your Company.

_____ 3. You are required to review the stated procedures with your Parsons Construction Management representative. Work may not commence on the site until the review is complete and the Subcontractor responds formally that the procedure is understood and will comply.

_____ 4. You are required to review the stated procedures with your Parsons Construction Management representative. Work may not commence on the site until the review is complete and you must confirm formally the disciplinary action to be taken against the supervisor and employees.

_____ 5. All work on the site will stop until the Parsons Construction Management representative reviews all the facts with the Subcontractor and determines if the contract between the parties will be terminated.

Sincerely,

_____
Parsons Representative

cc: Issuing Construction Manager Representative
Job File
GBU Safety Manager
Project Manager

SECTION 7 – SAFETY TRAINING

7.1 PROJECT SAFETY ORIENTATION

The Parsons Project Manager, Project Engineer, or Project Safety Manager conducts the site-specific orientation for all new Parsons staff and subcontractor management personnel.

The Orientation takes approximately *one hour to complete* and consists of applicable owner, Parsons, and regulatory reference material, including:

- Owner – Contractor Safety Program and Manual of Safety Regulations Handbook and security requirements
- Applicable OSHA 1910 General Industry and 1926 Construction Regulations and others as required
- Parsons applicable requirements, including items covered in Section 4.2
- Subcontractor requirements

All visitors must receive a brief orientation as described in Section 4.2, and be escorted by the Project Manager, Project Engineer, Project Safety Manager or a designee familiar with the potential hazards on the project.

Subcontractors must conduct similar orientations for their staff and craft employees and must document all orientations using the Employee/Subcontractor Training Acknowledgement and sample form (Exhibit 7-1). The Project Manager maintains the orientation documents and acknowledgement forms.

7.2 PARSONSU SAFETY MODULES AND START TRAINING – ZERO INCIDENT TECHNIQUES

Consistent with Parsons corporate initiatives in safety training, the Project Manager will identify all applicable personnel (i.e. managers, engineers and supervisors, including subcontractor personnel), that shall be current in the completion of safety modules on ParsonsU and that should receive START training to further Parsons' goal of zero incidents

The GBU and Division Safety Manager serve as the certified trainers for periodic START training sessions for new personnel. They should be contacted if personnel need to receive training.

Exhibit 7-1

PARSONS

Employee/Subcontractor Training Acknowledgement

Name of Trainer: _____

Training Subject: _____

Training materials used: _____

Name of employee: _____

Date of hire/assignment: _____

I, _____, hereby certify that I have received training as described above in the following areas:

- Names of personnel responsible for site safety and health.
- Safety, health or other hazards at the site.
- The proper use of personal protective equipment.
- The potential occupational hazards in general in the work area and associated with my job assignment.
- Work practices by which a worker can minimize risks from hazards.
- Safe use of engineering controls and equipment on the site.
- Acute effects of compounds on the site.
- Decontamination procdures.
- General safety requirements indicate the safe work conditions, safe work practices and personal protective equipment required for my work.
- The hazards of any chemicals to which I may be exposed and my right to information contained on material safety data sheets for those chemicals, and how to understand this information.
- My right to ask questions, or provide any information to the employer on safety either directly or anonymously without any fear of reprisal.
- Disciplinary procedures the employer will use to enforce compliance with general safety requirements.

I understand this training and agree to comply with general safety requirements for my work area.

_____ _____

Employee Signature Date

Exhibit 7-2 - Safety Meeting Sign-In Sheet

Safety Meeting Presenter: _____ Date: _____
Current Weather Conditions:

Temperature (^{o}F) = _____ Wind Direction = _____ Wind Speed = _____
Clear - Sunny – Cloudy – Rain - Snow Forecast = _____
Current Site Conditions (circle as appropriate):

Dry - Wet - Muddy - Frozen - Snow Covered - Other (describe) _____

1. Incidents or Injuries to report from Previous Day Activities: No □ Yes □ - explain below:

_____

2. Safe and/or At-Risk Observations from Previous Day Activities:_____

_____

3. Activities Taking Place Today: _____

_____

3. Anticipated Hazards: _____

_____

4. Engineering Controls-Work Practices-PPE to Protect Against Hazards: _____

_____

5. Additional Safety Topic or Comments: _____

PRINTED NAME	SIGNATURE	COMPANY	LAST 4 DIGITS OF SS #

7.3 DAILY TOOLBOX SAFETY MEETINGS

Parsons and its subcontractors conduct daily toolbox safety meetings. These meetings include topics relevant to upcoming work and may include reviews of recent incidents on the project. The Project Manager is responsible for the toolbox safety training content and documenting and retaining attendance records using Exhibit 7-2.

7.4 ACTIVITY HAZARDS ANALYSIS TRAINING

When the activity hazards analysis is complete, the Parsons Project Manager/Engineer/Supervisor or subcontractor conducts a training session with all employees involved with the analyzed task. The training may be informal and at the site where the task is performed. Employees should be given an opportunity to provide input regarding task steps, hazards identified, and appropriate control measures.

The Project Manager documents and maintains the activity hazards analyses using Exhibit 6-2.

7.5 REGULATORY TRAINING PROGRAMS

OSHA regulations require specific training in certain circumstances. Based on the scope of work and meetings with regulatory officials, the following training topics are provided on the project:

- *Hazard Communication – as per 29 CFR 1910.1200*
- *General – all workers engaged in activities which are potentially exposed to hazardous substances and health hazards must be trained to meet 1910.120(e)(1). Annual 8-hour refresher training as per 29 CFR 1910.120(e)(3) is required for workers and supervisors must be trained to meet 29 CFR 1910.120(e)(4).*
- *CPR/AED/First aid – provided to personnel based on project activities identified in the Scope of Work (i.e. life threatening) and EMS response time (i.e. less than 15 minutes). See Section 6.9.*

The Project Manager determines the necessary training and coordinates the training with the Project Safety Manager. *(See SHARP Management Manual Section 8 for further details.)*

7.6 OSHA OUTREACH PROGRAMS

When applicable, the project may use qualified instructors and online courses to conduct OSHA 10-hour construction safety training. If applicable, supervisory staff must complete the 30-hour course. Depending on the scope of work, similar requirements may be included in all subcontracts. Participants successfully completing the course receive a certificate of completion from OSHA.

7.7 SPECIALIZED TRAINING AND ORIENTATIONS

Project personnel receive specialized training on client rules and requirements as well as the unique tools, equipment, and procedures used to perform the work. The project budget includes funding for the following training:

Description	Attendees	Schedule

SECTION 8 – RECORDKEEPING AND POSTING

Parsons and its subcontractors must comply with the recordkeeping requirements of OSHA, Owner, Parsons Corporation, and this safety program, including:

- OSHA 300 logs
- Medical treatment and followup
- Cranes
- Heavy equipment inspection logs
- Fall protection
- Training
- Inspections
- Audits
- Others as required

The Project Manager is the official recordkeeper for files relating to Parsons employees. Each subcontractor maintains its files.

The project displays OSHA posters in conspicuous places as required by OSHA, including one poster on the main bulletin board located in the treatment plant office. The OSHA 300 log for the project or the GBU shall be posted from February 1 – April 30 of each calendar year.

SECTION 9 – SAFETY AND HEALTH REQUIREMENTS

9.1 SAFETY AND HEALTH REQUIREMENTS

Table 9-1 represents OSHA, owner, and Parsons corporate regulations and requirements applicable to the project. Based on the most recent risk assessments, Parsons Project Manager and Project Safety Manager update the listed topics periodically. Training and other requirements are updated in this PSP as required by changes to Table 9-1.

Parsons and its subcontractors are individually responsible for training their respective employees and for complying with all project requirements. Failure to comply could lead to disciplinary actions against Parsons employees and subcontractors or their employees.

Exhibit 9-1 – Competent Person and Job Safety Analysis Requirements

Safety and Health Requirement	OSHA Regulation	EM 385-1-1 Regulation	Competent Qualified Person-Supv	Training Required	JSA Required
1. General Safety & Health	1926.20	01.A	*Yes*	*Yes*	*Yes*
2. Mobilization and Demobilization	NA	NA	*No*	*Yes*	*Yes*
3. Sump and Sewer Sampling	NA	NA	*Yes*	*Yes*	*Yes*
4. Well Sampling	NA	NA	*Yes*	*Yes*	*Yes*
5. Working inside facilities	NA	NA	*Yes*	*Yes*	*Yes*
6. Drilling	Various	NA	*Yes*	*Yes*	*Yes*
7. Confined Spaces	1910.146; 1926.21	06.01	*Yes; Supv*	*Yes*	*Yes*
8. Fire Protection and Prevention	1926.24, 150-155, 352	09.A	*Yes*	*Yes*	*Yes*
9. Personal Protective Equipment	1926.28, 95-98, 100-107	05.A	*Yes*	*Yes*	*Yes*
10. Emergency Employee Action Plans	1926.35	01.E	*Recommended*	*Yes*	*Yes*
11. Noise Exposure	1910.95; 1926.52	05.C	*Yes*	*Yes*	*No*
12. Ventilation	1926.57, 353		*Recommended*	*Yes*	*Yes*
13. Hazard Communication	1926.59	1.B.06	*Yes*	*Yes*	*Yes*
14. Hazardous Waste Operations and Emergency Response	1910.120; 1926.65	28.A	*Yes* *Supv – 8 hr*	*Yes*	*Yes*
15. Accident prevention signs and tags	1926.200	08.A	*N/A*	*N/A*	*N/A*
16. Waste Disposal	1926.252	14.D	*Yes*	*Yes*	*Yes*
17. Tools	1926.300-307	13.A	*N/A*	*N/A*	*Yes*
18. General Electrical	1926.416	11.A	*Yes*	*Yes*	*Yes*
19. Lockout Tagout	1910.147; 1926.417	12.A	*Yes*	*Yes*	*Yes*
20. Lockout Tagout Permit System	1910.147	12.A	*Yes*	*Yes*	*Yes*
21. Maintenance of Electrical Equipment	1926.431	11A	*Yes*	*Yes*	*Yes*
22. Aerial Lifts	1926.453	22.J and K	*Yes*	*Yes*	*Yes*
23. Fall Protection	1926.500-503	21.A	*Yes*	*Yes*	*Yes*
24. Motor Vehicles, Mechanized Equipment	1926.600-603	18.A	*Yes*	*Yes*	*Yes*

Safety and Health Requirement	OSHA Regulation	EM 385-1-1 Regulation	Competent Qualified Person-Supv	Training Required	JSA Required
25. Barricades	1926.202		*N/A*	*N/A*	*N/A*

Safety and Health Requirement	OSHA Regulation	EM 385-1-1 Regulation	Competent Qualified Person	Training Required	AHA Required
26. Powered Industrial Trucks (forklifts)	1910.178		*Yes*	*Yes*	*Yes*
27. Site Clearing	1926.604	31.A	*N/A*	*Yes*	*Yes*
28. Excavations	1926.650-652	25.A	*Yes*	*Yes*	*Yes*
29. Excavation Permit	N/A	N/A	*Yes*	*Yes*	*Yes*
30. Concrete and Masonry Construction	1926.700-706	27.A	*Yes*	*Yes*	*Yes*
31. S/L General Requirements	1926.1051		*Yes*	*Yes*	*Yes*
32. Stairways	1926.1052	21.E	*Recommended*	*Yes*	*N/A*
33. Ladders	1926.1053	21.D	*Yes*	*Yes*	*Yes*
34. Ladder/Stair Training	1926.1060		*Yes*	*Yes*	*Yes*

APPENDIX A
Job Safety Analysis

Job Safety Analysis Worksheet

Contractor:	Parsons or O&M Enterprise	Date:	06/28/06	JSA No:	0001
Supervisor:	Rick Becken, Dan Lipp, Jim Schuetz	Permit to work required?	NO	BP Permit No:	
Location of worksite:	Sanborn, NY	JSA team members:			
Description of work:	Site Walkover/Reconnaissance and general field activities				

Name	Initials	Name	Initials
Rick Becken	RB	Dan Lipp	DJ
Jim Schuetz	JWS		

Activity List the tasks required to perform the activity in the sequence they are carried out.	Hazards Against each task list the hazards that could cause injury when the task is performed.	Risk control measures List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.	Who is responsible? Write the name of the person responsible (supervisor or above) to implement the control measure identified.
Mobilization/Preparation/Set-up	Change in weather conditions	Check weather forecast. Observe sky for signs of adversity.	RB DJ JWS Any other onsite workers
	Rain	Have proper PPE (i.e. rain gear, footwear, etc) available. Be aware of slip hazards, puddles, etc. Check PPE for abnormal wear and tear, rips, etc.	
	Sunshine	Have sunscreen (SPF > 15) available for ultraviolet protection. Have sufficient drinking water for dehydration during warm weather. Look for signs and symptoms of dehydration or heat exhaustion.	
	Snow	Have warm clothes available for cold temperatures. Look for signs and symptoms of hypothermia or frostbite.	
Accessing the work location	Lightning	Do not begin or continue work until lightning subsides for 20 minutes.	RB DJ JWS Any other onsite workers
	High winds, dust storm	Wear spoggles if dust/debris is visible.	
	Fire	Do not park vehicles in fields where vegetation could catch on fire from the exhaust system. Look under vehicle for sufficient height clearance from vegetation.	

SIGNED

Contractor/Subcontractor: ..... Date: ...../...../..... EBM/Project Mgr.: ..... Date: ...../...../.....

Activity List the tasks required to perform the activity in the sequence they are carried out.	Hazards Against each task list the hazards that could cause injury when the task is performed.	Risk control measures List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.	Who is responsible? Write the name of the person responsible (supervisor or above) to implement the control measure identified.
Work Activity Accessing the work location (cont'd)	Potential Hazards	Preventive or Corrective Measures	RB DJ JWS Any other onsite workers
	Hidden objects (i.e. Bobwire fencing, irrigation ditch, abandoned utilities – conduit, pipes, etc)	Use a walking stick or other object to survey the walking area in front of you.	
	Streams	Observe depth of stream and speed of current before proceeding through the stream.	
	Walking on uneven or wet terrain (i.e. slopes, leaves, covered objects, holes, puddles, etc)	Wear steel toe rubber boots versus over-the-shoe rubber boots when walking long distances. Use a walking stick or other object for additional support/balance and to check for animal burrows/holes in high vegetation.	
	Insects, rodents, animals, etc.	Wear light colored clothing and/or Tyvek coveralls for additional skin protection, if necessary. Apply bug repellant spray or lotion to exposed skin.	RB DJ JWS Any other onsite workers
	Vegetation	Create a clear path or route with mechanical equipment, whenever possible. Wear appropriate PPE for the vegetation (i.e. Tyvek or Carhart coveralls, leather gloves, face shield, etc) for vegetation that could cause cuts/punctures and/or is higher than waist level.	
	Struck by/against	Wear appropriate personal protective equipment (PPE) based on the surrounding work environment (i.e. hard hat, safety glasses, work boots, traffic safety vest, hearing protection, etc).	
General activities	Chemicals, germs etc.	Good hygiene practices should always be followed: Keep hands away from face and mouth. (For example, do not lick hand before picking a piece of paper or paging through a notebook). Wash hands properly and thoroughly prior and after using the restroom facility, after work activities, prior to eating. Suppression of habits such as spitting or nose-picking General avoidance of unhygienic or sick people. Holding a tissue in your hand or using the upper arm/elbow region over mouth when coughing or sneezing, not a bare hand	RB DJ JWS Any other onsite workers.

SIGNED

Contractor/Subcontractor: ..... Date: ...../...../..... EBM/Project Mgr.: ..... Date: ...../...../.....

Job Safety Analysis Worksheet

Contractor:	Parsons or Chopra-Lee	Date:	**2/23/06**	JSA No:	**0002**
Supervisor:	Jim Schuetz or Dan Lipp	Permit to work required?	**NO**	BP Permit No:	
Location of worksite:	Sanborn, NY	JSA team members:			
Description of work:	Mobilization, De-mobilization and loading/unloading transport vehicles equipment				

Name	Initials	Name	Initials
Dan Lipp	DJL	Jim Schuetz	JWS

Activity List the tasks required to perform the activity in the sequence they are carried out.	Hazards Against each task list the hazards that could cause injury when the task is performed.	Risk control measures List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.	Who is responsible? Write the name of the person responsible (supervisor or above) to implement the control measure identified.
1) Load equipment into vehicle	Theft of vehicle. Traffic. Lifting, pinch points, slips, trips, falls. Load shifts during transportation.	Do not leave vehicle running unattended. Place traffic cones around work area and wear high visibility vest. Wear work gloves, transport equipment on cart. Load equipment into vehicle in a manner to minimize potential shifting of the load. Complete vehicle inspection form	Vehicle driver
2) Drive to job site, drive back from site to office.	Vehicle accident Pedestrian accident Debris in road Uneven road surface Inclement weather	Practice defensive driving Wear seatbelt in moving vehicle. Obey all traffic signals and laws. Do not follow vehicles too closely. Maintain both hands on steering wheel when driving. Eliminate potential Distractions (food, beverages, cell phones, etc.) **ENGINE ON – PHONE OFF** Reduce speed if appropriate to compensate for inclement weather conditions.	Vehicle driver
3) Unload equipment	Theft of vehicle. Traffic. Lifting, pinch points, slips, trips, falls.	Do not leave vehicle running unattended. Place traffic cones around work area and wear high visibility vest. Wear work gloves, transport equipment on cart.	Vehicle driver

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Contractor/Subcontractor: ..... Date: ...../...../..... EBM/Project Mgr.: ..... Date: ...../...../.....

Job Safety Analysis Worksheet

Contractor:	Parsons or O&M	Date:	**10/28/05**	JSA No:	**0003**
Supervisor:	Rick Becken, Dan Lipp, Jim Schuetz	Permit to work required?	**NO**	BP Permit No:	
Location of worksite:	Sanborn, NY	JSA team members:			
Description of work:	Treatment plant operations				

Name	Initials	Name	Initials
Rick Becken	RB	Dan Lipp	DJ
Jim Schuetz	JWS		

Activity List the tasks required to perform the activity in the sequence they are carried out.	Hazards Against each task list the hazards that could cause injury when the task is performed.	Risk control measures List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.	Who is responsible? Write the name of the person responsible (supervisor or above) to implement the control measure identified.
1) Stage equipment for treatment system operation and general considerations	Vehicle or equipment movement Lifting hazards Loose overhead hazards Insects Heat Stress Visibility	Set vehicle and trailer brakes, chock all wheels Be conscious of load and movement with each lift Check leveling and soft ground (or that could soften under changing weather conditions). Establish shaded area, frequent water breaks. Establish 24 hour lighting of terminal is adequate and augment as necessary	RB DJ JWS
2) Operate treatment system	Slips, trips and falls Pressurized hoses and carbon vessels Electrical shock hazards Fall hazards	Monitor work site and secure loose hoses, wires and equipment. Inspect gauges frequently to detect any undue pressure build-up. GFCI connections, de-energize equipment before servicing. Keep tank stairs free of debris and utilize provided handrails	RB DJ JWS
3) Periodic check of equipment and work site safety	Changes in operations equipment or site conditions.	Check tank farm LEL prior to initial daily entry and periodically throughout each work shift. Inspect pressurized hoses, electric lines and fittings and connections during each work shift. Periodically inspect electrical, mechanical and chemical system operations for safety hazards and warning signs.	RB DJ JWS
4) Shut down equipment operations	Pressure buildup Shifting equipment during reloading Accumulated overhead hazards	Monitor pressure buildup prior to disconnecting fittings Anticipate load and equipment shifts prior to decommissioning Inspect elevated surfaces for accumulated equipment	RB DJ JWS

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Contractor/Subcontractor: ..... Date: ...../...../..... EBM/Project Mgr.: ..... Date: ...../...../.....

Job Safety Analysis Worksheet

Contractor:	Parsons or O&M	Date:	10/28/05	JSA No:	0004
Supervisor:	Rick Becken, Dan Lipp, Jim Schuetz	Permit to work required?	NO	BP Permit No:	
Location of worksite:	Sanborn, NY				
Description of work:	Groundwater Sampling				
	Parsons or O&M				

JSA team members:

Name	Initials	Name	Initials
Rick Becken	RB	Dan Lipp	DJ
Jim Schuetz	JWS		
			JSA

Activity List the tasks required to perform the activity in the sequence they are carried out.	Hazards Against each task list the hazards that could cause injury when the task is performed.	Risk control measures List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.	Who is responsible? Write the name of the person responsible (supervisor or above) to implement the control measure identified.
1) Access site monitoring wells: depth-to-fluid gauging.	Pinch points. Sharp edges. Vehicular traffic. Slip, trip, fall. Hand injury. Splash, spill and direct contact w/ water	Use gloves to protect hands from sharp edges and direct contact when appropriate. Wear a brightly colored traffic vest and use barricades to mark off work area. Maintain clear vision of where you are walking. Wear work gloves to loosen bolts and pry lid open. Place pry bar between lid and ground surface before grabbing lid with gloved hand. Wear safety glasses, latex inner and nitrile outer gloves when gauging groundwater or LNAPL. Maintain supply of sorbent pads to for clean-up of splashes, drips and small spills, and/or sorbent material.	Listed in order of most senior to less senior: RB DJ JWS Any other onsite workers
2) Use bailer and rope to bail LNAPL or purge wells of groundwater in preparation of sample collection (quarterly event).	Contact with LNAPL or contaminated wate Occasional vehicular traffic Lifting Splash, spill	Wear safety glasses, latex inner and nitrile outer gloves when gauging groundwater or LNAPL. Wear a brightly colored traffic vest when appropriate. Prepare and think through each lift, use good body mechanics. Maintain supply of sorbent pads to for clean-up of splashes, drips and small spills, and/or sorbent material.	Listed in order of most senior to less senior: RB DJ JWS Any other onsite workers
3) Groundwater sample Collection	Contact with contaminated water. Contact with sample preservative (such as HCL acid) Lfting.	Wear safety glasses and latex gloves. Open container carefully and hold down wind to prevent contact with vapors, wear safety glasses and latex gloves Do not over pack cooler, place inside vehicle where it will not need to be moved.	Listed in order of most senior to less senior: RB DJ JWS Any other onsite workers
4) Carry LNAPL or fluids to storage drums, pour fluid into drums	Vehicular traffic Slips, trips, and falls splash and spill hazards back strain	Wear high visibility vest, be aware of vehicular traffic Review pathway to ensure all trip hazards are removed Maintain supply of sorbent pads for clean-up of splashes Do not overfill buckets, use correct body positioning, lift with legs to prevent back strain.	Listed in order of most senior to less senior: RB DJ JWS Any other onsite workers

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Contractor/Subcontractor: ..... Date: ...../...../..... EBM/Project Mgr.: ..... Date: ...../...../.....

Job Safety Analysis Worksheet

Contractor:	Parsons	Date	2/24/05	JSA No:	0005
Supervisor:	Jim Schuetz, Dan Lipp Sara Chmura	Permit to work required?	NO	BP Permit No:	
Location of worksite:	Sanborn site, NY				
Description of work:	Sewer Monitoring and Sump Sampling				

JSA team members:

Name	Initials	Name	Initials
Jim Schuetz	JWS	Dan Lipp	DJP

Activity List the tasks required to perform the activity in the sequence they are carried out.	Hazards Against each task list the hazards that could cause injury when the task is performed.	Risk control measures List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.	Who is responsible?
1) Access site sampling or inspection location	Occasional vehicular traffic and site operations Slip, trip, fall Splash, spill and direct contact w/ water Opening sampling point	Where reflective clothing, be escorted by site personnel. Use gloves to protect hands from sharp edges and direct contact when appropriate. Watch where you are walking, there may be numerous trip hazardous and an unfamiliar environment. Wear proper gloves, safety glasses, long sleeve shirt. Use proper tools to open and proper lifting techniques (test the lift). Use caution when working around manhole, do not enter for any reason.	JWS, DJL SMC
2) Storm water sample collection and manhole inspection	Pinch points; Sharp edges Slip, trip, fall Lifting (over-packed coolers etc.) Splash, spill and direct contact w/ water or lab bottle preservatives	Constant Awareness. Use gloves to protect hands from sharp edges and direct contact when appropriate. Before sampling take the time to set up a proper work area, Keep the work tidy. Do not over pack coolers, Think through each lift, Lift with your knees, test the lift. Wear safety glasses, latex inner and nitrile outer gloves when handling storm water samples. Maintain supply of sorbent pads for clean-up of splashes, drips and small spills, and/or sorbent material. Open VOAs down-wind and away from face. Do not over-pack coolers.	JWS, DJL SMC
3) Clean up work area, secure equipment & load truck.	Pinch points, hand injuries Occasional vehicular traffic Slip, trip, fall Lifting Departing	Constant awareness. Use gloves to protect hands from sharp edges and direct contact when appropriate. Wear a brightly colored traffic vest while onsite. Keep work area clear, pay attention to facitity operations, stay out tof their way. Avoid carrying too much (i.e. “the lazy man’s carry” Do not over pack coolers, Think through each lift, Lift with your knees, test the lift. Be sure to walk the area and ensure you have all tools and equipment, in form (sign out) personnel prior to leaving.	JWS, DJL SMC

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Contractor/Subcontractor: ..... Date: ...../...../..... EBM/Project Mgr.: ..... Date: ...../...../.....

Job Safety Analysis Worksheet

Contractor:	Parsons	Date	3/10/05	JSA No:	0006
Supervisor:	Jim Schuetz, Dan Lipp, Sara Chmura	Permit to work required?	NO	BP Permit No:	
Location of worksite:	Sanborn site, NY				
Description of work:	Working inside facilities				

JSA team members:

Name	Initials	Name	Initials
Jim Schuetz	JWS	Dan Lipp	DJP

Activity List the tasks required to perform the activity in the sequence they are carried out.	Hazards Against each task list the hazards that could cause injury when the task is performed.	Risk control measures List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.	Who is responsible?
1) General access and working in facility	Site operations Occasional vehicular traffic Slip, trip, fall Facility processes. Previous injuries or other things that may make a person more at risk	Constant Awareness – sign in with BP operations. Be accompanied by facility representative. Remember the path in and emergency escapes out. Wear a brightly colored traffic vest while onsite. Proceed to work area with caution, watch for overhead works and objects, around door activities, fork trucks. Observe pathway and facility features. Wear proper footwear, use caution while walking on carbon dust. Follow BP HSSE procedures, they will likely be safer than facility procedures. The site workers may say "that does not matter", evaluate the situation yourself with respect to our H&S plan and the golden rules. Ask everyone if they have any injuries or special conditions that will restrict they are activity.	JWS and DJL SMC
2) Setting up work area, perform tasks.	Pinch points; Sharp edges Site operations Heat from furnaces Working above confined spaces Slip trip, fall	Use proper gloves for the task to protect hands from sharp edges and direct contact. Set up work area in place that will not interfere with site activities. When necessary use lock out tag out procedures. Use caution when walking around furnaces, they can be extremely hot. Do not touch or work near. Use caution when working around manhole, do not enter for any reason. Set up work area so there are no trip hazards around the opening.	JWS, DJL SMC
3) Clean up work area	Pinch points, hand injuries Occasional vehicular traffic Slip, trip, fall Lifting	Use proper gloves for the task to protect hands from sharp edges and direct contact. Wear a brightly colored traffic vest while onsite. Exit work area with caution, watch for overhead works and objects, around door activities, fork trucks. Think through each lift, Lift with your knees, test the lift.	JWS, DJL SMC

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Contractor/Subcontractor: ..... Date: ...../...../..... EBM/Project Mgr.: ..... Date: ...../...../.....

Job Safety Analysis Worksheet

Contractor:	Parsons or O&M	Date:	**10/28/05**	JSA No:	**0007**
Supervisor:	Rick Becken, Dan Lipp, Jim Schuetz	Permit to work required?	**NO**	BP Permit No:	
Location of worksite:	Sanborn, NY	JSA team members:			
Description of work:	Lockout tagout				

Name	Initials	Name	Initials
Rick Becken	RB	Dan Lipp	DJ
Jim Schuetz	JWS		

Activity List the tasks required to perform the activity in the sequence they are carried out.	Hazards Against each task list the hazards that could cause injury when the task is performed.	Risk control measures List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.	Who is responsible? Write the name of the person responsible (supervisor or above) to implement the control measure identified.
Review energy control procedures and notify all appropriate personnel. Also identify and review the task and hazards.	Uncontrolled release of kinetic, potential, electrical, and thermal energy.	Gain familiarity of the system and controls and ensures that all understand the purpose, function, and hazards of a lockout/tagout program. Procedure to be done by an authorized employee who has been trained in lockout/tagout procedures.	RB DJ JWS Any other onsite workers
Isolate the energy source.	Uncontrolled release of kinetic, potential, electrical, and thermal energy.	Determine and locate all potential energy sources. Locate isolating devices for all energy sources and shutdown power or energy to equipment. Attach the approved lock or tag or lock and tag to the isolating device and insure that it is properly locked and tagged out. If a padlock cannot be used, specialty equipment such as chains, cables, breaker clips, plug covers, and valve handle covers can be substituted. Tags must be legible and clearly warn others of the potential hazards. Date, description of work, and authorized employee signature required. Tag must be attached using a nylon cable tie or equivalent that can withstand 50 pounds of pressure. The key for the lock must be kept by the authorized personnel who installed the lock.	RB DJ JWS Any other onsite workers
Dissipate stored energy as appropriate.	Uncontrolled release of kinetic, potential, electrical, and thermal energy.	Any areas or equipment that may store kinetic, potential, electrical, and thermal energy must be dissipated or restrained either by blocking, bleeding, tension release, grounding or discharging.	RB DJ JWS Any other onsite workers
Test the system prior to starting work.	Uncontrolled release of kinetic, potential, electrical, and thermal energy.	Verify lockout/tagout by attempting to start any equipment or control panels. Return all switches to the OFF position once test has been completed. Verify a zero energy state.	RB DJ JWS Any other onsite workers

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Contractor/Subcontractor: ..... Date: ...../...../..... EBM/Project Mgr.: _____ Date: ...../...../.....

Multiple users of Lockout/Tagout.	Uncontrolled release of kinetic, potential, electrical, and thermal energy.	Each employee must have control of the sources of energy in which they are involved in (i.e. own locking device). Obtain multiple lock adapter to isolating device so that all employees can attach their OWN lock to the adapter. Or a lockout box can be used to store the keys for the lockout/tagout locks in place of an adapter.	RB DJ JWS Any other onsite workers
Reactivating equipment after lockout/tagout.	Uncontrolled release of kinetic, potential, electrical, and thermal energy.	Notify all appropriate personnel of reactivation if necessary. Remove all tolls or equipment from the area. Verify that all switches or controls are in the OFF or Neutral position. Only the person who applied the lockout/tagout can remove the lock and tag. Engage the energy isolation device to restore energy to the system. Start normal operating procedures. Inform all appropriate personnel, if necessary, that lockout/tagout procedures have been completed and that system is energized.	RB DJ JWS Any other onsite workers
Outside service or Sub-contractors		Inform company of lockout/tagout procedures. Review a copy of the company's lockout/tagout procedures. Discuss or have sub-contractor employees review this JSA or offer input and knowledge not encompassed in the JSA.	RB DJ JWS Any other onsite workers

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Contractor/Subcontractor: ..... Date: ...../...../..... EBM/Project Mgr.: _____ Date: ...../...../.....

Job Safety Analysis Worksheet

Contractor:	Parsons or O&M	Date:	**06/29/05**	JSA No:	**0008**
Supervisor:	Rick Becken, Dan Lipp, Jim Schuetz	Permit to work required?	**NO**	BP Permit No:	
Location of worksite:	Sanborn, NY	JSA team members:			
Description of work:	Aerial lift				

Name	Initials	Name	Initials
Rick Becken	RB	Dan Lipp	DJ
Jim Schuetz	JWS		

Activity List the tasks required to perform the activity in the sequence they are carried out.	Hazards Against each task list the hazards that could cause injury when the task is performed.	Risk control measures List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.	Who is responsible? Write the name of the person responsible (supervisor or above) to implement the control measure identified.
Arrival of aerial lift at site. Complete BP Working At Heights Permit. Three people must sign (issuer, counter signer, received by).	Lift accident Faulty wiring Loose parts (bolts, pins, tread, etc.) Safety Features Working Air/Hydraulic Leaks Weather	Inform BP personnel of activities. Review equipment manuals and follow manufacturer specifications at all times. MAKE SURE MANUALS ARE PRESENT. Check operating and emergency controls. Make sure all signage on control panel is clear and readable. Inspect air, hydraulic, and fuel systems for leaks. Check for loose or missing parts. Inspect the lift in all areas. Check lift pins or bolts for presence or absence. Test back-up alarm and lights. Inspect platform door and chains for wear and weakness. Check for obstructions that may hinder lift movement. Inspect the wheels and tires for wear or damage. Do not operate the lift if any issues arise not matter how small the issue. Call the vendor and have a new one delivered. Do not operate in adverse weather conditions (i.e. thunderstorms, high winds).	

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Contractor/Subcontractor: ..... Date: ...../...../..... EBM/Project Mgr.: _____ Date: ...../...../.....

Starting the aerial lift.	Unlevel Ground Pinch Points and Scrapes Traffic Slips/Trips/Falls Eye and Hearing	Inspect ground for objects, slopes, and stability. Have a spotter. Discuss route or path and the job at hand. Discuss traffic situation and placement of cones along path. Wear a brightly colored traffic vest and hard hat. All working around lift as well. Use of nitrile and leather work gloves required. Use appropriate eye and hearing protection. Check operating and emergency controls. Make sure all signage on control panel is clear and readable. Use care when climbing onto lift platform. Use three point contact at all times. Watch for pinch point and scrapes when attaching safety chains. Wear full body harness and secure lanyard to lift platform. Become familiar with the controls. Practice using lift platform controls. This portion moves independently and can be practiced w/o moving entire lift. Be aware of the location of emergency stop controls. Uncertain of how to start????	
Driving aerial lift into position next to stripper tower and bucket operation.	Falling objects Electrocution Damage to lift/Improper use Lift accident Property Damage Eye and Hearing Slips/Trips/Falls Personnel Injury Tip Overs Overloading/Instability Traffic Unlevel Ground Atmospheric conditions Splash Weather	Inspect ground for objects, slopes, and stability. Have a spotter. Place 42” cones along path next to air stripper tower. Wear a brightly colored traffic vest and hard hat. All working around lift as well. Use of nitrile and leather work gloves required. Use appropriate eye and hearing protection. Be aware of the location of emergency stop controls. Use care when climbing onto lift platform. Use three point contact at all times. Stand firmly on the platform floor and do not climb on guardrails. Wear full body harness and secure lanyard to lift platform. Do not exceed manufacture’s loading capacity. See manual. No power lines are in the vicinity. Use slow calculated movements when driving and when operating the lift platform near the stripper tower. Never drive with lift platform elevated. Keep close to ground. Unless specified otherwise in the operators manual. Do not exceed vertical/horizontal limits. When inspecting demisting pad while stripper is operating, monitor for VOCs and wear face shield. Engage outriggers, brakes, and wheel chocks even when on level slope when stationary. Do not operate in adverse weather conditions (i.e. thunderstorms, high winds).	

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Contractor/Subcontractor: ..... Date: ...../...../..... EBM/Project Mgr.: _____ Date: ...../...../.....

Installing packing media.	Falling objects Tip Overs Overloading/Instability Traffic Eye Lift accident Property Damage/Damage to lift Slips/Trips/Falls Personnel Injury Weather	Air stripper system should be locked and tagged out by this time. Make sure side panel where packing was removed is properly secured. Wear a brightly colored traffic vest and hard hat. All working around lift as well. Use of nitrile and leather work gloves required. Use appropriate eye protection. Be aware of the location of emergency stop controls. Use slow calculated movements operating the lift platform near the stripper tower. Do not exceed vertical/horizontal limits. Do not exceed manufacture's loading capacity. Two boxes of packing media can fit on lift platform. Do not exceed this. Use care when climbing onto lift platform. Use three point contact at all times. Do not operate in adverse weather conditions (i.e. thunderstorms, high winds). Wear full body harness and secure lanyard to lift platform. Engage outriggers, brakes, and wheel chocks when stationary. Install demisting pad when complete.	
Use over multiple days.	Damage to lift/Improper use Lift accident Property Damage/Collisions Traffic	Inspect daily. Refer to owner's manual or rental vendor for inspection questions. Check fuel and oil levels. Engage outriggers, brakes, and wheel chocks even when stationary. Store lift in a safe area away from traffic and surround with 42" cones.	

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Contractor/Subcontractor: ..... Date: ...../...../..... EBM/Project Mgr.: _____ Date: ...../...../.....

JOB SAFETY ANALYSIS (JSA)

Job Safety Analysis Worksheet

Contractor:	Parsons or O&M	Date:	06/28/06	JSA No:	0009
Supervisor:	Rick Becken, Dan Lipp, Jim Schuetz	Permit to work required?	NO	BP Permit No:	
Location of worksite:	Sanborn, NY				
Description of work:	Excavation				

JSA team members:

Name	Initials	Name	Initials
Rick Becken	RB	Dan Lipp	DJ
Jim Schuetz	JWS		

Activity List the tasks required to perform the activity in the sequence they are carried out.	Hazards Against each task list the hazards that could cause injury when the task is performed.	Risk control measures List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.	Who is responsible? Write the name of the person responsible (supervisor or above) to implement the control measure identified.
Review proposed excavation location.	Traffic Slips, trips and falls	Wear high visibility safety vest. Remove all trip hazards. Wear appropriate PPE Stay aware of footing and do not run.	RB DL JWS
Establish work and support zone.	Traffic Slips, trips and falls	Wear appropriate PPE including high visibility safety vest and rubber sole work boots. Remove all trip hazards by keeping materials/objects organized and out of walkways. Notify owner/manager of work activities and locations. Utilize traffic barricades and orange to set up exclusion zone surrounding work area.	RB DL JWS
Set up backhoe on location.	Pedestrian traffic, Vehicular traffic Overhead utilities Stability/rollover of drill rig	Wear appropriate PPE including high visibility safety vest . Stay clear of operating equipment and rig when moving. Use spotter to assist operator in positioning backhoe. Position rig to avoid overhead utility lines by distance defined by voltage and local regulations	RB DL JWS
Perform daily pre-operation safety inspection of backhoe and associated equipment.	Slips, trips, falls. Injury from drill rig such as hitting head or cutting hand.	Wear hard hat, safety glasses, steel toe work boots, work gloves.	RB DL JWS

JOB SAFETY ANALYSIS (JSA)

Excavate area of interest.	Trauma from impacting backhoe bucket, or other portions of the equipment, crushed from being run over by equipment.	Wear high visibility safety vest, keep clear of operating equipment.	RB DL JWS
Collect closure samples (soil)	Excavation cave-in.	**DO NOT ENTER THE EXCAVATION.** Have back hoe operator bring soil to the surface, rest bucket on ground and remove hands from the levers. Approach bucket after making eye contact with the operator and use stainless steel trowel to remove a sample of soil from the bucket. Move away from the bucket and signal the operator that you have your sample and he is free to operate the back hoe.	RB DL JWS
Collect closure samples (water)	Excavation cave-in.	**DO NOT ENTER THE EXCAVATION.** Have the backhoe operator set the bucket down on the ground and remove his hands from the levers. Tie a disposable bailer to a tooth of the bucket using poly rope. Move away from the bucket and signal the operator to lower the bailer into the excavation to retrieve a sample of groundwater.	RB DL JWS
Secure excavation.	Falling into the excavation.	Use barricades and orange fencing to secure excavation limits. Park back hoe and any other equipment around the excavation to further shield excavation from pedestrians.	RB DL JWS
Secure soil stockpile	Exposure to petroleum contaminated soils	Cover soils with plastic sheeting.	RB DL JWS
Backfill excavation	Trauma from impacting backhoe bucket, or other portions of the equipment, crushed from being run over by equipment	Wear high visibility safety vest, keep clear of operating equipment.	RB DL JWS t
Clean up work zones.	Back injury, muscle strain. Traffic concerns. Slips, trips or falls.	Use good body mechanics. Wear safety glasses, high visibility vest. and correct PPE. Remove and/or dispose of all task generated trash, tools, materials and debris from the job site	RB DL JWS

Job Safety Analysis Worksheet

Contractor:	Parsons or O&M	Date:	06/26/06	JSA No:	0010
Supervisor:	Rick Becken, Dan Lipp, Jim Schuetz	Permit to work required?	NO	BP Permit No:	
Location of worksite:	Sanborn, NY				
Description of work:	Skid Steer Loader				

JSA team members:

Name	Initials	Name	Initials
Rick Becken	RB	Dan Lipp	DJ
Jim Schuetz	JWS		

Activity List the tasks required to perform the activity in the sequence they are carried out.	Hazards Against each task list the hazards that could cause injury when the task is performed.	Risk control measures List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.	Who is responsible? Write the name of the person responsible (supervisor or above) to implement the control measure identified.
Skid loader arrival at site.	Loader accident Faulty wiring Loose parts (bolts, pins, tread, etc.)	Review equipment manuals and follow manufacturer specifications at all times. MAKE SURE MANUALS ARE PRESENT. Inspect the loader in all areas. Check bucket pins or bolts for presence or absence. Test back-up alarm and lights. Check seat-belt to see if it works. Make sure all signage on control panel is clear and readable. Check for obstructions that may hinder bucket movement. Make sure safety bar is not bent or misshapen and that bar locks into place. Inspect the tires, metal or rubber treads for large tears or damage. Do not operate the loader if any issues arise not matter how small the issue. Call the vendor and have a new one delivered.	Rick Becken Dan Lipp Jim Schuetz
Starting the loader.	Damage to loader Improper use Loader accident Property Damage Eye and Hearing Pinch Points and Scrapes Slips/Trips/Falls	Wear a brightly colored traffic vest and hard hat. Use of nitrile and leather work gloves required. Use appropriate eye and hearing protection. Use care when climbing onto skid steer to enter cab. Use three point contact at all times. Watch for pinch point and scrapes when lowering safety bar and use seat belt. Become familiar with the controls. Find a small un-used area for practice. Apply seatbelt and lower safety bar and lock into place. The loader will not start unless the bar is in place. Turn the ignition key to the on position then turn off again to practice emergency shutdown. The loader is only meant for one person only.	Rick Becken Dan Lipp Jim Schuetz

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Contractor/Subcontractor: ..... Date: ...../...../..... EBM/Project Mgr.: _____ Date: ...../...../.....

Driving the loader to stripper tower and roll-off boxes.	Loader accident Property damage Traffic Personnel Injury Instability Lack of Vision	Before and after each time the loader is driven across the road to the roll-off boxes use 42" traffic cones to block the road in both directions. Remove the cones after each trip across the road to allow traffic to continue. The road is not busy but be aware nonetheless. Use slow calculated movements when driving and when operating the bucket. Be aware of the surroundings and look at your path for objects or obstructions like traffic, cones, people, piping, etc. recognize and avoid potentially dangerous situations. KNOW WHERE EVRYONE IS. Never travel with the lift arms raised. Keep the bucket close to the ground which helps maintain stability and vision. When driving to the roll-off boxes to dump packing have the bucket tilted back so as not to spill packing material. Do not over fill bucket. When at the roll-off keep a clear distance so as to raise the bucket over the level of the roll-off. Carefully/Slowly drive the loader forward for and tilt the bucket down to unload. Tilting the loader bucket down and up is done by foot pedals. Be careful not to confuse this action with moving the loader forward which is done by the handle bars. Then back away from the roll-off and lower the bucket down with bucket tilted back. Re-position loader next to stripper tower all the while being aware of objects and personnel. Turn ignition to the off position, raise bar, undo seatbelt, using three point contact to dismount and remove cones from the road.	Rick Becken Dan Lipp Jim Schuetz
Use over multiple days.	Wear Loosened parts Personnel Injury Loader Accident Property Damage	Inspect daily. Refer to owner's manual or rental vendor for inspection questions.	Rick Becken Dan Lipp Jim Schuetz

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Contractor/Subcontractor: ..... Date: ...../...../..... EBM/Project Mgr.: ..... Date: ...../...../.....

Job Safety Analysis Worksheet

Contractor:	Parsons and O&M Enterprises	Date:	**9/28/05**	JSA No:	**00011**
Supervisor:	E.A. Felter	Permit to work required?	Yes ☐ NoX☐	BP Permit No:	
Location of worksite:	2040 Cory Drive, Sanborn, NY	JSA team members:			
Description of work:	Inspection and planning for the installation of tray stripper and underground pipeline				

Name	Initials	Name	Initials
Rick Becken	RCB	Mark Straub	MS
Eric Felter	EAF	Joe Gulley	JG

Activity List the tasks required to perform the activity in the sequence they are carried out.	Hazards Against each task list the hazards that could cause injury when the task is performed.	Risk control measures List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.	Who is responsible? Write the name of the person responsible (supervisor or above) to implement the control measure identified.
Inspection of area for installation of new tray stripper and underground groundwater conveyance line.	Chemical – chlorinated solvents in groundwater being treated Use of step ladder Pinch points Splash Moving parts Noise Falling objects	Wear appropriate PPE if contact with water is possible Do not exceed 6 feet Open ladder in stable flat area Avoid treatment system water Avoid treatment system parts Wear hearing protection where required Wear hard hat and steel toed shoes at all times as required Safety vest required Long sleeve shirts required	Each person on site Each person on site Each person on site Each person on site Each person on site Each person on site Each person on site Each person on site

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Contractor/Subcontractor: ..... Date: ...../...../..... EBM/Project Mgr.: _____ Date: ...../...../.....

Job Safety Analysis Worksheet

Contractor:	Parsons or O&M	Date:	**10/28/05**	JSA No:	**0012**
Supervisor:	Rick Becken	Permit to work required?	**NO**	BP Permit No:	
Location of worksite:	Sanborn, NY	JSA team members:			
Description of work:	Mowing with tractor				

Name	Initials	Name	Initials
Rick Becken	RB	Dan Lipp	DJ
Jim Schuetz	JWS		

Activity List the tasks required to perform the activity in the sequence they are carried out.	Hazards Against each task list the hazards that could cause injury when the task is performed.	Risk control measures List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.	Who is responsible? Write the name of the person responsible (supervisor or above) to implement the control measure identified.
Perform pre job inspection • Pre job safety briefing required • Tires • Seat belts • Roll bar • Oil levels • All electrical connections • Fuel level Inspect safety devices including but not limited to (emergency power cut off hazard lights roll over bars…)	• Abrasions and cuts. • Slip, trip, fall from steps • Fire safety • Traffic concerns	• Wear gloves to prevent cuts and abrasions • Maintain awareness of surroundings and footing, and employ a fall protection system when working at heights > 6-ft. Keep work area free of debris, extraneous equipment and supplies. Route power cables, hoses, etc. in safe and protected manner • Use hearing protection (muffs, earplugs, etc.) • Wear high visibility (brightly colored) safety vests when working in traffic areas. • All heavy equipment must have functioning audible back-up alarms.	Rick Becken
Site inspection • Develop rout of entry and exit • Inspect grade to conform to vehicle specifications • Inspect mowing area for decree • Wells in mowing area must be marked Maintain proper distance from buildings and stationary objects	• Abrasions and cuts. • Slip, trip, fall from steps • Traffic concerns	• Maintain awareness of surroundings and footing, and employ a fall protection system when working at heights > 6-ft. Keep work area free of debris, extraneous equipment and supplies. Route power cables, hoses, etc. in safe and protected manner • Observe all posted speed limits and adjust appropriately for environmental conditions. Avoid travel at peak traffic times if possible • Utilize caution tape or high visibility fence around work area. Set up equipment and support vehicles defensively, set out safety cones if near traffic.	Rick Becken

SIGNED

Contractor/Subcontractor: ..... Date: ...../...../..... EBM/Project Mgr.: ..... Date: ...../...../.....

Mowing • Secure all equipment during transportation • Limit work load to vehicle specifications • Hazardous liquids must be carried in approved containers • Tractor is not to be used for towing	• Extreme weather conditions • Heavy lifting • Contact with hazardous vapors • Contact with hazardous liquids • Contact with energized equipment • Rotating equipment hazards. • Unexpected spillage • Roll over • Uneven surfaces • Potential for loads to shift and spill • Flying objects • Extreme weather • Noise	• Observe all posted speed limits and adjust appropriately for environmental conditions. Avoid travel at peak traffic times if possible • Utilize caution tape or high visibility fence around work area. Set up equipment and support vehicles defensively, set out safety cones if near traffic. • Utilize vehicle hazard lights • Wear clothing suitable to the climate and work environment • Utilize proper body mechanics and engineering controls such as mechanical hoists for heavy loads. • Wear snug clothing that covers exposed skin. Apply insect repellent. Look before reaching into or entering areas that may shelter insects or snakes. • Maintain a safe distance from the river bank and compensate for the current environmental conditions. DO NOT attempt to recover materials if recovery requires walking onto river ice or areas where the edge of the river is uncertain. • Conduct periodic air monitoring. Cease operations or upgrade to Level C if action level is exceeded. • Wear proper gloves for dermal protection against contaminated liquids Keep rotating equipment free of material that could be snagged	Rick Becken

SIGNED

Contractor/Subcontractor: ..... Date: ...../...../..... EBM/Project Mgr.: ..... Date: ...../...../.....

Job Safety Analysis Worksheet

Contractor:	O&M Enterprises, Inc.	Date:	**9/08/05**	JSA No:	**0013**
Supervisor:	Richard C. Becken	Permit to work required?	Yes ☐ No ☐	BP Permit No:	
Location of worksite:	BP 2040 Cory Dr. Sanborn, NY	JSA team members:			
Description of work:	Spread stone in driveway				

Name	Initials	Name	Initials
Richard C. Becken	RCB	Eric A. Felter	EAF
		George W. Hermance	GWH

Activity List the tasks required to perform the activity in the sequence they are carried out.	Hazards Against each task list the hazards that could cause injury when the task is performed.	Risk control measures List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.	Who is responsible? Write the name of the person responsible (supervisor or above) to implement the control measure identified.
Review tractor manufacturers owners manual, heed all safety instructions, and maintenance schedules	Not Applicable		Richard C. Becken
Perform a daily inspection of the tractor prior to operation.	Personal injury, damage to equipment, property damage	Check tire pressure, oil level, fuel level, electrical connections, and any other items listed in owners manual prior to starting tractor	Richard C. Becken
Operate tractor using front end loader to spread the stone in parking area outside treatment building	Vehicular traffic, Injury to operator, injury to pedestrians, property damage	Maintain a safe speed, barricade traffic from entering work area, never carry passengers, be aware of persons and objects around you.	Richard C. Becken
		Don't attempt to push more stone than the equipment is made to handle, do not use hand held cell phones, wear hearing protection, hard hat, safety glasses, high visibility vest, long sleeved shirt.	

SIGNED

Contractor/Subcontractor: ..... Date: ...../...../..... EBM/Project Mgr.: ..... Date: ...../...../.....

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Job Safety Analysis Worksheet

Contractor:	O&M Enterprises, Inc.	Date:	**9/29/05**	JSA No:	**0014**
Supervisor:	Richard C. Becken	Permit to work required?	Yes ☐ No ☐	BP Permit No:	
Location of worksite:	BP 2040 Cory Dr. Sanborn, NY	JSA team members:			
Description of work:	Removal of pump, motor and concrete base				

Name	Initials	Name	Initials
Richard C. Becken	RCB		

Activity List the tasks required to perform the activity in the sequence they are carried out.	Hazards Against each task list the hazards that could cause injury when the task is performed.	Risk control measures List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.	Who is responsible? Write the name of the person responsible (supervisor or above) to implement the control measure identified.
Close influent and effluent valves,drain pipe and pump of contaminated water by slowly loosening flange bolts	Splash hazard, contaminated water	Splash protection, wear safety glasses polycoated tyvek, latex inner gloves and heavy duty leather outer gloves, use shield to prevent spray of water from loosened flange	Richard C. Becken
Cut influent and Efluent CPVC piping with hand held hack saw	Personal injury, damage to equipment and property, splash hazard	Cut away from self and others, be cautious when cutting near other equipment.	Richard C. Becken
Glue blind flange or plug onto influent and effluent piping.	Inhalation of pipe cement	Ensure proper ventilation	Richard C. Becken
Unbolt and remove pumpand motor from concrete base	Personal injury and electrical shock	Lock out / tag out of electrical circuit , wear heavy duty leather gloves , proper lifting techiques	Richard C. Becken
Break up and removal of concrete pump and motor base using sledge hammer or Jack hammer	Personal injury from flyinf debris, improper body position, lifting	Safety glasses, goggles, hard hat, steel toe boots, heavy duty leather gloves, proper lifting techniques.	Richard C. Becken

SIGNED

Contractor/Subcontractor: ..... Date: ...../...../..... EBM/Project Mgr.: ..... Date: ...../...../.....

Job Safety Analysis Worksheet

Contractor:	Parsons	Date:	**06-27-05**	JSA No:	**0015**
Supervisor:	George Hermance	Permit to work required?	Yes ☐ No ☒	BP Permit No:	
Location of worksite:	BP Sanborn, Sanborn, NY	JSA team members:			
Description of work:	Demolition Labor Activities				

Name	Initials	Name	Initials

Activity List the tasks required to perform the activity in the sequence they are carried out.	Hazards Against each task list the hazards that could cause injury when the task is performed.	Risk control measures List the control measures required to eliminate or minimize the risk of injury arising from the identified hazard.	Who is responsible? Write the name of the person responsible (supervisor or above) to implement the control measure identified.
Inspect Area and Tools	Slip/Trip/Fall, Traffic, Broken Tools, Falling Debris	Wear appropriate PPE, Plan your routes, Watch out, Wear High Visibility Reflective Vests, Remain away from heavy equipment and vehicles, and their paths of travel, Inspect tools properly, Any broken or nearly-broken tools must be taken out of service until repaired or replaced, Stay away from areas where debris or structures may fall,	Supervisor
Remove Debris or Materials from the area	Slip/Trip/Fall, Traffic, Mechanical Movement/Energy, Falling Debris, Heat Stress	Wear appropriate PPE, Plan your routes, Watch out, Wear High Visibility Reflective Vests, Obey spotter if one is present, Avoid traffic areas as much as possible, Barricade areas if needed, Never approach equipment from rear or sides, Never approach equipment or enter their work areas or paths unless the operator gives you permission, Ensure area is safe to enter, Be aware of overhead structures or debris, Stay away from areas where debris or structures may fall, Drink plenty of water/electrolytes, Takes breaks in a shaded area, Watch for signs of heat stress,	Supervisor
Clean Area	Slip/Trip/Fall, Traffic, Mechanical Movement/Energy, Falling Debris, Heat Stress	Wear appropriate PPE, Plan your routes, Watch out, Wear High Visibility Reflective Vests, Obey spotter if one is present, Avoid traffic areas as much as possible, Barricade areas if needed, Never approach equipment from rear or sides, Never approach equipment or enter their work areas or paths unless the operator gives you permission, Ensure area is safe to enter, Be aware of overhead structures or debris, Stay away from areas where debris or structures may fall, Drink plenty of water/electrolytes, Takes breaks in a shaded area, Watch for signs of heat stress,	Supervisor
Return tools to storage area	Slip/Trip/Fall, Traffic, Mechanical Movement/Energy, Falling Debris	Wear appropriate PPE, Plan your routes, Watch out, Wear High Visibility Reflective Vests, Obey spotter if one is present, Avoid traffic areas as much as possible, Barricade areas if needed, Never approach equipment from rear or sides, Never approach equipment or enter their work areas or paths unless the operator gives you permission, Ensure area is safe to enter, Be aware of overhead structures or debris, Stay away from areas where debris or structures may fall,	Supervisor

SIGNED

Contractor/Subcontractor: ..... Date: ...../...../..... EBM/Project Mgr.: _____ Date: ...../...../.....

APPENDIX B
Other Parsons Forms

PREDRILLING / SUBSURFACE CHECKLIST FOR INTRUSIVE FIELDWORK

Remediation Management Health, Safety and Environmental Management Document

Site Name _____ Job # _____
Site Phone Number: _____ _____
Site Address _____ County _____
BP EBM: _____ Phone _____
BP Site Manager Contacted On: _____ By: _____
Site Drawings (yes / no / NA) _____ (please attach) Historical Drawings (yes / no / NA) _____
Third Party Construction/Redevelopment Plans (yes/no/NA)
***ATTACH SITE FIGURE WITH PROPOSED BORING LOCATIONS
Subcontractor's (drillers, concrete, etc...) Company _____
Subcontractor's Name / Contact Person _____ Phone _____
Meeting / Start Date _____ Time _____

1) **Health and Safety Plan (HASP) Completed:** Date _____

2) **Utility Protection Services (Dial-before-you-dig)** Minimum 48 Hrs. Advance Notice (State-Specific Notification Period Supercedes)
Called: Date _____ Time _____ Initials _____
Reference # _____
Proposed Drilling Locations Premarked for Locating Service. Y / N ____

3) **Mandatory Utility Locating Service Performed?** Y / N _____
Called: Date _____ Time _____ Initials _____
Name of Locating Service: _____
Telephone #/ contact: _____
Supplier Locating Technician: _____
Type of sensing equipment used: _____
Proposed Drilling Locations Premarked Y / N ____

4) **Other Potential Underground Structures**
Name of City Engineer / Utility Representative: _____
Telephone #: _____
Date Notified _____ Maps: Y / N _____
Cleared: Y / N____

5) **COMPLETED SITE WALKOVER WITH SITE MANAGER / DESIGNEE OR OWNER / TENANT REP.** Y / N _____
Name of Site Manager: _____
Name of Property Owner/Tenant Representative: _____
Cleared: Yes / No
Building Utility Service Line Connections Identified: Y / N____
(Hand sketch on site map w/proposed boring locations and most likely utility trench locations)

6) **Utility Inventory:** Y / N____

Utility	Name	Height (ft)	Phone	Notified - Date	Marked
Above Ground Services:					
Electric				Y / N	Y / N
Telephone				Y / N	Y / N
Cable				Y / N	Y / N
Overhead Supports				Y / N	Y / N
Traffic light cables				Y / N	Y / N

Utility	Name	Depth (ft)	Phone	Notified - Date	Marked
Below Ground Services:					
Electric				Y / N	Y / N
Telephone				Y / N	Y / N
Cable				Y / N	Y / N
Gas				Y / N	Y / N
Water				Y / N	Y / N
UST System				Y / N	Y / N
Stormwater				Y / N	Y / N
Sanitary / Sewer				Y / N	Y / N
Steam				Y / N	Y / N
Pipeline Companies				Y / N	Y / N
Other:					
				Y / N	Y / N
				Y / N	Y / N
				Y / N	Y / N

7) Signature of Supplier Project Mgr. (required to begin fieldwork):

High Risk Drilling Locations Approved by EBM **Date:** Y / N

(This document to be included with the site HASP and should be available upon request.)

NAME OF PROJ. MGR. (PRINTED OR TYPED)

SIGNATURE OF PROJ. MGR.

Name of Supplier Field Personnel

Signature of Field Personnel

NOTE: Primary Contractor Signature is verification that Field Personnel have reviewed, adhered to, and received the necessary supplier training to implement precautionary drilling standards for performing work at RM properties as defined in RM's GROUND DISTURBANCE PRACTICE and RM's ENVIRONMENTAL DRILLING GUIDELINES & SAFE PRACTICE. Any questions or concerns should be elevated to the Primary Contractor Project Manager or EBM prior to initiating field work.

ADDITIONAL COMMENTS / NOTES:

DAILY FIELD REPORT

Date:_____ Page _____ of _____

Were there any incidents or near miss incidents?	Yes:		No:	
Incident Report Submitted?	Yes:		No:	

Job Name:		Parsons Contact:	
Job Number:		Weather	
Client:		Temperature	
Client Contact:		Time/Hours	
PRISM Project:			

On-Site:

Name	Company	Position	Activity	Total Field Hours

Company	Equipment/Vehicle	Model/Type	Quantity	Total Mileage*	
				Light	Heavy

AIR MONITORING:

Equipment	Hazards/Chemicals	Exceeded Actions Levels/ Permissable Exposure Limits		PPE Level (D,MD,C,B,A)
		Yes	No	

SUMMARY:

Notes: * Light: personal/rental cars (<3.5 tons) mileage Heavy: Equipment/Machinery (>3.5 tons) mileage

Entered into PARCOMM and BP forms

DFR:_____

(initials)

POLICY: VEHICLE INSPECTION

BACKGROUND:

Routine inspection of vehicles prior to operation contributes to safer operation, decreases the likelihood of property damage, reduces pollution, and increases work efficiency.

STATEMENT OF POLICY:

It is the driver's responsibility to complete the appropriate level of inspection of any covered vehicle used by Parsons personnel (or Subcontractor personnel) in the conduct of business for any BP entity, including: BP, Atlantic Richfield, and Remediation Management. "Covered vehicles" are defined herein as automobiles and light trucks owned by Parsons or Subcontractor; leased by Parsons or Subcontractor; rented for more than seven consecutive days by Parsons or Subcontractor; or personal vehicles used by Parsons or Subcontractor. Rental cars rented for seven consecutive days or less require inspection at the time of rental for body damage, visual inspection of tires for obvious wear or under-inflation, and assurance of working horn, lights, turn signals, and mirrors. If the rental vehicle is not deemed to be in proper condition, it should be refused and a different vehicle provided by the rental company. No documentation of these inspections is required.

RESPONSIBILITIES OF EMPLOYEES:

- Inspect vehicles per the Parsons BP Program "Pre-Driving Checklist" and "Checklist Instructions." Take the appropriate actions, as indicated therein.

References:

This policy is maintained on LiveLink for ease of access.

Approved:  ***DATE: 11/10/04***

PRE-DRIVING CHECKLIST **PARSONS BP PROGRAM**

The person driving the vehicle is to complete this form before driving the vehicle. For Parsons-owned/leased vehicles, submit the form to equipment manager. For rental and personal vehicles, place it in the project file.

Year:	Make & Model:			VIN#:		
Mileage:	Contract No. (Rentals Only):					
Driver's Name (Print):						
Items:	Freq.	Date	Date	Date	Date	Date
Tires: Visual Inspection	Daily					
Mirrors adjusted and adequate for blind spots	Daily					
Horn	Daily					
Body of Vehicle	Daily					
Fuel Tank Over 1/2 Full	Daily					
Equipment & Load Properly Secured	Daily					
Wipers and Fluid Reservoir	Weekly					
Tires: Condition & Air Pressure	Weekly					
Turn Signal Lights	Weekly					
Brake Lights	Weekly					
Emergency Flasher Lights	Weekly					
State Inspection Valid	Monthly					
State Registration Valid	Monthly					
Vehicle Insurance Card Valid	Monthly					
Oil Level on Dipstick	Monthly					
Coolant Level	Monthly					
Brake Fluid Level	Monthly					
Transmission Fluid Level	Monthly					
Power Steering Fluid Level	Monthly					
Belts and Hoses	Monthly					
Low & High Beam Headlights	Monthly					
Fire Extinguisher	Monthly					
Wash Vehicle	Monthly					
I agree to read and follow the Checklist Instructions on page 2 of this form.						
Driver's Signature:				Date:		

Conduct all items below in a safe manner. If you are uncertain how to complete the item safely, seek the assistance of a qualified person. Enter "N/A" (not applicable) for any items that do not apply.

1. Complete all information within the first three rows. VIN #: Is the "vehicle identification number" found on a metal plate just below the driver's side windshield or inside the doorframe of the driver's door.
2. Verify that the owner's manual is present in the glove box of the vehicle. This is required for all vehicles except rentals. Refer to the owner's manual where needed for specific items.
3. For each day you inspect the vehicle, enter the date for that column. Below the date, place an "X" under each item checked and found to be okay.
4. Tires: Condition & Air Pressure. Inspect the tread on the tire by observing the minimum-tread indicators between treads on the tire or by using a tread wear gauge. If tire tread depth does not extend above tread wear indicators and/or is less than 3/16 inch the vehicle should not be driven until the tire is replaced. Check the air pressure in the tires using a pressure gauge when the tire is cold, adjust per manufacturer specifications (e.g., sticker on driver's side door frame). Check the condition of the spare, including the air pressure. Make sure there is a jack in the vehicle.
5. Mirrors adjusted and adequate for blind spots. Are the mirrors adjusted properly for the driver? Are blind spot mirrors needed, especially for vans, larger vehicles or for towing? Mirror adjustments must be made prior to vehicle operation.
6. Horn. Test vehicle's horn
7. Wipers and Fluid Reservoir. Check wiper blades on windshield. Replace if worn or damaged. Add washer fluid as needed.
8. Fuel Supply Adequate. Is the fuel tank above ½ full? Add fuel, if needed. **Do not overfill.**
9. Turn Signal Lights. Check functioning. If signal light is out replace bulb or fuse as needed.
10. State Inspection Valid. If the state of origin requires inspections, confirm that the vehicle has passed inspection and has the required documentation (e.g., windshield sticker).
11. State Registration Valid. Make sure the vehicle is properly registered, and has the required documentation (e.g., windshield sticker and/or documentation in glove box).
12. Vehicle Insurance Card Valid. Is the vehicle's insurance card valid?
13. Body of Vehicle. Check body of vehicle for damage. Document any damage found on vehicle.
14. Oil Level on Dipstick. Run the vehicle long enough to achieve operating temperature, then shut off vehicle. Wait 5 minutes, then check the oil dipstick in the vehicle. If oil is not at the full mark add the appropriate amount. **Do not overfill.**
15. Coolant Level. Check the coolant level in the overflow reservoir when the engine is cool. If coolant is not at the full mark add the appropriate amount to the reservoir (**NOT TO THE RADIATOR**).
16. Brake fluid level. Check the brake fluid reservoir. If fluid is outside the minimum or maximum line have the brake system checked by a qualified mechanic before driving the vehicle.
17. Transmission Fluid Level. Applies to automatic transmissions only. Warm the engine to operating temperature. **Place the gear selector in "Park," and engage the parking brake.** Open hood. Depress brake pedal, and move the gear selector to each position, holding for 2 seconds each. Return the gear selector to Park. Check the transmission fluid dipstick with the engine running. Add transmission fluid as needed. **Avoid contacting moving and/or hot components.**
18. Power Steering Fluid Level. Check the power steering dipstick in the vehicle per owner's manual. If the fluid is not at the full mark add the appropriate amount. **Significant loss of fluid may indicate a serious problem: check with a qualified mechanic.**
19. Belts and Hoses. Visually inspect all belts and hoses. Replace worn or damaged belts and/or hoses as needed.
20. Low & High Beam Headlights. Check high and low beams on headlights. Replace lamps as needed.
21. Brake lights. Check brake lights. If brake light is out replace bulb or fuse as needed.
22. Emergency Flashers Lights. Check emergency flashers. If flasher is out, replace bulb or fuse as needed.
23. Fire Extinguisher. If provided, is extinguisher fully charged?
24. Wash Vehicle. Wash vehicle in appropriate car wash or other suitable manner.
25. Sign and date checklist.

The driver conducting the inspection may correct simple problems, complete the inspection, and drive the vehicle. However, the driver must arrange for service by a qualified mechanic for more serious problems. Notify the equipment manager of any problems.

APPENDIX C
BP Control of Work Forms

HOISTING & LIFTING OPERATIONS SAFETY PROCEDURES

SAFETY METHOD STATEMENT

It is imperative that all workers understand that no task is so important or so urgent that it cannot be done safely.

SEQUENCE & SAFE METHOD OF WORK

- Mobile Crane - Required Inspection Form must be filled out prior to performing hoisting operations (see Appendix C)
- Complete a pre-task Job Safety Analysis (JSA) (see Appendix A) prior to any hoisting operation to evaluate potential safety hazards associated with the lift, including, but not limited to:
  - Overhead electrical
  - Lock out, tag out
  - Weather conditions
  - Working at heights
  - Forecourt safety
  - Condition of equipment
  - Completion of Daily Equipment Inspection
- All hoisting must be performed with lifting devices specifically capable of safely lifting the load required depending upon:
  - Size and weight of equipment (such as a tank or sign)
  - Height of lift required (i.e. in or out of the excavation, on or off a truck, on or off a sign post)
  - Lateral reach required for situating the lifting device on a stable surface
- If lifting operations must be done in the vicinity of overhead power sources, these sources must be locked-out or a remote control crane must be used. If a remote crane is used, then additional steps must be taken to ensure that personnel stand clear and can not be harmed if the vehicle comes into contact with power source
- Hoisting shall not take place while any person is standing on any part of an object to be lifted, or in a tank excavation
- Personnel must never stand under an object suspended by a lifting device or in the travel path of the object
- Only properly rated and maintained slings and rigging may be used to lift items
- The crane rope must never be wrapped around an object or its container and lifted, or threaded through a lifting lug or in any way be used as a sling
- Mobile lifting equipment provided with outriggers/stabilizers must have the outriggers set out for all lifting operations
- Frequent and periodic inspections of the lifting equipment must be conducted in compliance with regulations. Inspection documentation must be readily available for inspection by BP personnel. This requirement applies to rental equipment as well. The rental agency must provide documentation of completed inspections; otherwise, the equipment shall not be rented.
- Lifting devices of the types referred to in this procedure must never be used for personnel retrieval devices. Only devices designed for personnel retrieval may be used for that purpose.

PURPOSE & SCOPE

The purpose of this procedure is to assure an *Incident and Injury Free Workplace* when personnel use hoisting and lifting equipment at BP sites. BP requires all employees and contractors performing work on behalf of BP to follow these procedures. These safety requirements are to be considered a minimum requirement and are mandatory. Additional safety measures may be required on a site or job specific basis by BP or by government regulations such as the OSHA standard (29 CFR 1926.251, 1926.550, 1926.552, 1926. 553, 1926.554, and 1926.453) on using lifting and hoisting equipment which may be obtained from the OSHA web site at http://www.osha.gov/index.html. Below is a summary of BP's safety requirements. The OSHA standard (29 CFR 1926.251, 1926.550, 1926.552, 1926. 553, 1926.554, and 1926.453) on using lifting and hoisting equipment may be obtained from the OSHA web site at http://www.osha.gov/index.html. It is the responsibility of the parties conducting the work to understand and follow all required safety regulations and practices.

These Hoisting and Lifting Safety Procedures establish minimum standards for general hoisting and lifting operations and contain special provisions for the following activities:

- Storage tank removal and installation
- Sign installation or removal and maintenance operations, excluding hi-rise signs
- All high-rise sign operations must be conducted utilizing site and operation specific safety procedures, pre-approved by a BP representative
- Hoisting performed with small maintenance service truck hoists

DEFINITIONS

Load (working) - The external load, in pounds, applied to the hoisting mechanism, including the weight of load-attaching equipment, such as load blocks, shackles, and slings.

Competent person – a person who is capable of identifying existing and predictable hazards in the surroundings, or working conditions that are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

REQUIRED SAFETY PRACTICES

OPERATOR CERTIFICATION

Employees operating powered lifting equipment must be certified for that piece of equipment. Certification must be available on the jobsite at all times for the operator.

RESPONSIBILITY

It is the responsibility of the contractor performing the hoisting or lifting operation to do so in a safe manner and in compliance with applicable regulations. If unsure about the safety of a lifting or hoisting operation, it is the contractor's responsibility to STOP the operation until the issue has been clarified, and the operation can be performed safely. The contractor should not begin work with lifts utilizing cranes, hoists, or other mechanical lifting devices, until the following steps have been taken:

- An assessment of the lift has been completed and the lift method and equipment has been determined by a competent person
- Operators of powered lifting devices are trained and certified for that equipment
- Rigging of the load is carried out by a competent person(s)
- Lifting devices and equipment have documented records of frequent and periodic inspections and have been certified for use within the past 12 months,
- Load does not exceed the dynamic and / or static capacities of the lifting equipment,
- All safety devices installed on the lifting equipment are operational
- All lifting devices and equipment have been visually examined before each lift by a competent person(s)

SPECIAL ISSUES FOR STORAGE TANK REMOVAL AND INSTALLATION

- During storage tank removal, work area shall be barricaded to eliminate entry by the public. If the tank removal operation can be accomplished in a single workday, traffic cones draped with orange snow fencing may be utilized as a barricade system. If the tank removal operation will take more than a single workday, a minimum 6-foot chain link fence shall be installed around the work area.
- Storage tank installations shall always be fenced.
- Cranes, excavators, and trackhoes are examples of devices that may be used to lift storage tanks to and from excavations and trucks, as long as they may be used safely and meet the requirements of the lift. Backhoes and mini-excavators may be used to remove small (550 gallon) storage tanks as long as they can be used safely and meet the requirements of the lift.

INCIDENT REPORTING

All incidents involving personal injury or property damage, or which had the potential to cause significant injury or damage, must be promptly reported to BP according to the RM Incident Notification Guidance Manual.. All information and assistance must be made available upon request to assist with an incident investigation, if necessary.

SPECIAL GUIDELINES FOR SIGN INSTALLATION, REMOVAL, AND MAINTENANCE

- Work area shall be barricaded to eliminate entry by the public. Because sign installation, removal, and maintenance operations typically take less than a single workday, traffic cones draped with orange snow fencing may be utilized as a barricade system.
- If the sign installation or removal operation will take more than a single workday, all equipment and material must be removed from the area of the sign and stored elsewhere on or off-site until the work begins again. Sign components may only be left in the general sign work area if the facility or portion of the facility is closed to the general public and a minimum 6-foot chain link fence has been installed around the work area.
- All cranes used for sign work at BP locations must be situated on paved surfaces with outriggers in place, if so equipped. Cranes used for sign work may not be situated on grassy or dirt areas without specific prior authorization of the Area Maintenance Manager or Global Alliance Project Manager.
- Line trucks, other truck-mounted or wheel-mounted cranes (wagon cranes) are examples of devices that may be used to lift signs, as long as they may be used safely and meet the requirements of the lift.
- Aerial lifts (bucket trucks, cherry pickers), scissor lifts and ladders are examples of devices that may be used to perform maintenance operations on signs, as long as they may be used safely and meet the requirements of the lift:
- Aerial lifts must be electrically isolated and meet the requirements for insulated aerial devices in OSHA 29 CFR 1926.453.
- A full body harness shall be worn and a lanyard attached to the boom or aerial lift basket when working from an aerial lift.

SPECIAL ISSUES FOR PERFORMING MAINTENANCE OPERATIONS WITH TRUCK MOUNTED CRANES

These safety rules apply to all maintenance service trucks with small boom cranes on the rear of the vehicle.

- The truck shall be placed so as to perform the hoisting operation as safely as possible.
- The truck engine shall be turned off during the entire maintenance work operation.
- The work area shall be barricaded to eliminate entry by the public and to provide a high visibility demarcation of the work area for safety of the person performing the work. When there is a choice as to truck location, the truck shall be placed so as to become a primary element of the barricade system.

APPENDIX A – JOB SAFETY ANALYSIS (JSA) – HOISTING & LIFTING HAZARD CONTROLS

JHA	HAZARDS	CONTROLS
Hoisting and lifting operations	• Electrocution from overhead electrical hazards • Equipment failure •Adverse Weather • Fall from heights • Vehicle impact • Electrocution from lighting signs/lights	• Conduct pre-task hazard evaluation • Use remote control crane as necessary • Assure all frequent and periodic inspections have been performed: Review inspection records as necessary, especially for rental equipment, • Complete Required Inspections/Permit to Work form prior to performing hoisting operations • Do not start work under threat of electrical storm. Stop work if adverse weather is encountered, • All workers in a bucket truck or scissors lift must wear a full body harness and lanyard, and tie off to bucket truck or scissors lift, • Refer to Working on the Forecourt method statement: Be sure that base of hoists, bucket trucks and ladders are protected from vehicular impact • Assure that all LOTO procedures are followed. Refer to LOTO method statement. All signs must be locked-out prior to performing maintenance services.

APPENDIX B - PERSONAL PROTECTIVE EQUIPMENT (PPE)

PERSONAL PROTECTIVE EQUIPMENT (PPE)

When a hazardous situation is recognized, steps should be immediately taken to eliminate the hazard either by engineering revision or by changing work methods. If it is not practical to eliminate the hazard, then personal protective equipment (PPE) must be used.

PPE Requirements

1. High visibility vest: Always
2. Safety Glasses: Always
3. Ear plugs or muffs: when working in close proximity to loud noises (jack hammer, vacuum trucks, lawn care)
4. Hard hat: Always
5. Fall protection harness: when working at heights greater than six feet from the ground or within six feet from an exposed edge
6. Gloves (chemical resistant): when working with gasoline or other solvents or corrosive chemicals
7. Gloves (leather or cotton): when working with sharp or abrasive materials
8. Long pants and long-sleeve work shirt: during any work at BP facilities
9. Steel-toe Boots or shoes (leather): during any work at BP facilities
10. Fire resistant clothing: when working where there is a risk of a flash fire

APPENDIX C – MOBILE CRANES REQUIRED INSPECTION FORM – PERMIT TO WORK

Location: _____ Vehicle ID_____
Audited by: _____ Date: _____

CHECK BOXES ONLY FOR EACH ITEM IN COMPLIANCE:
DAILY EQUIPMENT INSPECTION (FREQUENT)

- ❑ Crane has been visually inspected prior to use each day.
- ❑ Air or hydraulic systems inspected and in compliance for adjustment problems that may interfere with proper operation (deterioration or leakage in lines, tanks, valves, drain pumps, and other parts of systems)
- ❑ Hooks, hoist chains, and end connections checked for signs of wear, twist, cracks, distorted links, or excessive stretch and are in compliance

MONTHLY EQUIPMENT INSPECTION (PERIODIC)

- ❑ Running ropes checked at least monthly
- ❑ Deteriorated running ropes have been replaced
- ❑ Running ropes are of nominal diameter
- ❑ Outside wires in good condition, not worn or broken
- ❑ Running ropes free from corroded or broken wires at end connections
- ❑ End connections in good condition (not corroded, cracked, bent, or worn)
- ❑ Wires are properly placed, without excessive kinking, crushing, cutting, or unstranding
- ❑ Ropes that have been idle for one month or more (due to shutdown of crane) inspected thoroughly and in good condition
- ❑ Operating mechanisms with excessive component wear in good working condition
- ❑ Manufacturer's recommendations for rope reeving are met

ADDITIONAL INSPECTIONS

- ❑ Deformed, cracked, or corroded components replaced
- ❑ Loose bolts or rivets tightened
- ❑ Cracked or worn sheaves and drums replaced
- ❑ Worn, cracked, or distorted parts such as pins, bearings, shafts, gears, rollers, locking and clamping devices replaced
- ❑ Worn brake system parts, linings, pawls, and ratchets replaced
- ❑ Inaccuracies in load, wind, and other indicators over their full range set right
- ❑ Performance and safety of the machine's engine or motor meets manufacturer's requirements
- ❑ Chain drive sprockets inspected for excessive chain stretch and replaced if necessary
- ❑ Electrical controller contacts, limit switches, and pushbutton stations checked for signs of pitting or deterioration and replaced as necessary

IDLE OR STAND-BY EQUIPMENT INSPECTION

- ❑ Cranes that have been idle for up to one month have had frequent and periodic inspections before use
- ❑ Cranes that have been idle for over six months have met requirements of frequent and periodic checklist before use
- ❑ Stand-by cranes inspected using the frequent and periodic checklist every six months

INSPECTION DOCUMENTATION

- ❑ Frequent and periodic inspections have been documented
- ❑ Inspection documentation includes the following:
    1. Signature of the person conducting the inspection
    2. Date of the inspection
    3. Identification of the parts inspected

REPAIRS OR CORRECTIONS IDENTIFIED ON THIS FORM MUST BE COMPLETED BY:

(DATE)_____

Routed to: _____ Date _____

REPAIRS OR CORRECTIONS IDENTIFIED ON THIS FORM HAVE BEEN COMPLETED

Supervisor: _____ Date _____

LOCK-OUT / TAG-OUT

REMEDIATION MANGEMENT LOCK, TAG, AND TRY SAFETY PROCEDURES

It is imperative that all workers understand that no task is so important or so urgent that it cannot be done safely.

SEQUENCE & SAFE METHOD OF WORK

1. Prior to the start of any job where hazardous energy may be encountered, all sources of such energy must be isolated. Sources of hazardous energy include electrical, pneumatic, mechanical, hydraulic, thermal, chemical and other forms of energy.

2. A Qualified Electrical Contractor must perform high voltage and electrical work on switchboard circuits.

   Prior to conducting an on-site isolation inform the site manager that work is about to get underway and that the planned sequence and site layout program (detailing work zones, delivery and storage, and work areas) are confirmed.

3. Lock-out / tag-out procedures are:
   - Identify all potential energy sources or situations where a release of product may occur.
   - Include the isolation requirements on any work permits or job instructions.
   - Positively isolate equipment from all sources of potential energy or potential product releases.
   - Inform all who may be affected.
   - Drain and depressurize.
   - Lock-out / tag-out energy source and tag-out equipment.
   - Test to confirm that equipment cannot be started and/or that hydraulic or mechanical energy is controlled.
   - Complete work.

4. When work is complete:
   - Check that all people involved in the work have finished.
   - Inform all people who have been affected.
   - Check system integrity.
   - Ensure all equipment and personnel are clear.
   - "Unlock " lock-out system, remove tags and re-commission.
   - Test equipment function and place back into service.

5. Only a qualified electrician, as per local and national codes, will perform electrical disconnections, connections and terminations.

6. Upon completion, test for electrical safety and then re-commission the power supply, removing the lock-out / tag-out.

7. During fuel deliveries to the service station the use of all power tools and equipment is to stop. Tanker access & egress routes are to be cleared in advance if necessary.

8. Full details of anticipated hazards & control measures are given in Appendix A – Job Safety Analysis.

PURPOSE AND SCOPE

The purpose of this procedure is to assure an *Incident and Injury Free Workplace* where personnel work on equipment at BP sites that can and shall have its energy source locked-out and/or tagged-out. BP requires all employees and contractors performing work on behalf of BP to follow these procedures. These safety requirements are considered as a minimum requirement and are mandatory.
Additional safety measures may be required on a job or site-specific basis by BP or by government regulations such as the OSHA regulations (29 CFR 1910.147, 29 CFR 1926.417). Below is a summary of BP's lock-out/tag-out safety requirements. It is the responsibility of the parties conducting the work to understand and follow all required safety practices.

DEFINITIONS

Lock-out: A device that provides positive isolation using a lock to hold an energy-isolating device in the safe position. The lock shall be identified with the name of the person who applied the lock and who holds the key.
For any line that has the potential to contain fuel, it must be locked and /or tagged on both ends.
Multiple Locks: If more than one individual is required to lockout equipment, each shall place their own lock on the energy-isolating device.
Tag-out: A prominent warning that is securely attached to equipment with a tie having a minimum of 40# of bursting strength. The warning forbids the operation of equipment and bears the name of the person who applied the tag.

REQUIRED SAFETY PRACTICES

REMOVAL OF LOCKS AND TAGS

Lock-out locks and tags must only be removed by the person who applied them.
Exceptional Circumstances: Lock and/or tags may be removed by Job Supervisor (authority not to be delegated) after complying with the following procedure:
Verify that the person who placed the Lock and Tag is not on- site.
- Make all reasonable efforts to contact the person.
- Ensure that the site is in a safe and operable condition.
- Remove lock-out/ tag-out.
- Re-commission (start-up) equipment.
- Ensure that the person who applied the tag and lock knows the equipment has been returned to service.

CONTROL

For more complex isolations (requiring isolation devices in more than one physical location) a lock-out and tag list should be prepared listing where all locks and tags are to be placed. These should be checked off as they are placed and when they are removed at the end of the work.

EQUIPMENT

Each Contractor should equip themselves with a commercially available "lock-out station" containing lock-out tags, padlocks, multiple lock hasps etc. The locks should be "master keyed " and be individually keyed.

INCIDENT REPORTING

All incidents involving personal injury or property damage, or which had the potential to cause significant injury or damage, must be immediately reported to BP per the RM Incident Notification Guidance Manual. All information and assistance must be made available upon request to assist with an incident investigation, if necessary.

APPENDIX A – JOB SAFETY ANALYSIS (JSA) – LOCK-OUT / TAG-OUT

PRINCIPLE WORK STEPS	HAZARDS	CONTROLS	PERMITS/ TRAINING
Safety Requirements		• Contractor shall perform all work in accordance with BP Safe Work Conditions and/or local regulations	
Work Control	• General	• Contractor shall advise Site Manager of all electrical isolation to ensure site personnel do not remove any isolations devices that have been put in place.	

Protection of the Public/Workforce	• Injury
	• Property Damage
		• Every worker will be made aware that:
		  • Our greatest responsibility is assuring that no harm come to any employee or member of the public.
		  • The need for pre-planning work activities and having all the necessary protective equipment available is essential to conducting business.
		  • All work will be conducted in barricaded controlled work areas to ensure that an effective protective buffer zone between construction activities and the public will be maintained at all times. (See next item)	

Establishing a Controlled Work Area	• Vehicle impact • Unauthorized entry	• The Contractor shall adequately barricade their work location.	
Overhead power lines	• Electrocution • Power failure to neighbors	• Where overhead power lines are in close proximity and restrict the safe access to the work, the relevant utility supplier is to be contacted. Work will not proceed until the lines are isolated, removed or shielded.	
Electrical Work:	• Electrocution / Electrical shock • Burns	• Notify all affected employees that a lock-out / tag-out system will be used and why. • An electrician will ensure electrical lock-out / tag-out of equipment. • The electrician will ensure electrical safety prior to re-energizing the equipment.	Contractors are required to instruct their employees to recognize and avoid unsafe conditions that require lock-out and/or tag-out.
Electrical Power and Tools	• Electrocution • Burns • Customers tripping over power cords.	• The use of battery-operated tools is the preferred option only in non-hazardous atmospheres. Air tools should be used in hazardous areas. • Where this is unachievable, power shall be obtained from an isolated grounded outlet. Electrical cords must not be routed through hazard zones and must be contained within industrial grade covers wherever traffic or pedestrian contact is possible. • This power supply must be connected to a Ground Fault Circuit Interrupter (GFCI) (Earth Leakage protected). An assured grounding program is not acceptable. The power supply must meet BP and electrical authority minimum requirements. • All cords, tools, GFCI, to be checked on a daily basis. Any electrical tool or power cord found to be defective, damaged, or otherwise unserviceable shall be immediately removed from service until repaired or must be replaced.	A competent person is to perform all electrical repairs.

APPENDIX B - PERSONAL PROTECTIVE EQUIPMENT (PPE)

PERSONAL PROTECTIVE EQUIPMENT (PPE)

When a hazardous situation is recognized, steps should be immediately taken to eliminate the hazard either by engineering revision or by changing work methods. If it is not practical to eliminate the hazard, then personal protective equipment (PPE) must be used.

PPE Requirements

1.	High visibility vest:	Always
2.	Glasses,	Always
3.	Goggles, or face shield:	When working with high voltage electrical equipment, drilling, hammering, handling hazardous liquids
4.	Ear plugs or ear muffs:	When working in close proximity to loud noises (jack hammer, vacuum trucks, lawn care)
5.	Hard hat:	Always
6.	Fall protection equipment:	When working at heights above six feet and/or within six feet from an exposed edge
7.	Long pants and long-sleeve work shirt:	During any work at BP facilities
8.	Steel-to Boots or Shoes (leather):	During any work at BP facilities
9.	Gloves, electrical insulated:	When working with high voltage electrical equipment greater then 240 volts

BP

Search:
Â» Go

Issurance Plan | Reporting | Communication | Award Program | Resources

> Home> Resources> Forms> COW Permits> Hot Work Safety Procedures

Hot Work Safety Procedures

Sequence & Safe

THE CONTRACTOR MUST COMPLETE THE FOLLOWING ITEMS AND REVIEW WITH
WORKERS BEFORE HOT WORK STARTS

- Hot Work Permit requirements must be in place
- Job specific emergency procedures and notifications must be developed, reviewed with workers, and readily available
- Ensure the work area is free of non-essential personnel, equipment, combustible materials and vehicles
- All appropriate personal protective equipment (PPE) must be in use by workers (see Appendix B)
- A Fire Watch, with appropriate authority and responsibility, must be provided with the correct fire extinguishing equipment and combustible gas testing meter (see Appendix A – Duties of the Fire Watch)
- Blinding, isolation, and purging of equipment (with appropriate Lock-outs) must have been completed
  Ensure that at least two escape routes with unobstructed access are provided
- Before signing the permit, the person who writes the Hot Work Permit is responsible for determining if acceptable working conditions exist and verifying that permit is complete, including air testing and that specified equipment is in place (see Appendix A – Duties of Permit Writer)
- The Fire Watch must assist hot work activities by providing fire protection, air monitoring, and being constantly aware for fire hazards (see Appendix A – Duties of the Fire Watch)
- Upon completion of the hot work, the fire watch takes appropriate action to verify that no fire hazards exist before departing the area
- There shall be no work with open flames conducted at a BP site without prior verbal authorization from a BP Area Maintenance Manager or

Facilities & Engineering Manager. Open flame work within the hazardous zone at former retail and non-retail sites will require EBM authorization.

Purpose and Scope

The purpose of this procedure is to assure an Incident and Injury Free Workplace where personnel perform hot work at BP sites. BP requires all employees and contractors performing work on behalf of BP to follow these requirements. These safety requirements are considered as a minimum and are mandatory.

Additional measures may be required by government regulations or by BP or by government regulations such as applicable OSHA standard (29 CFR 1926. 352) which may be obtained from the OSHA web site at http://www.osha.gov/index.html. Below is a summary of BP's safety requirements. It is the responsibility of the parties conducting the work to understand and follow all required safety regulations and practices.

Definitions

Hot Work - any work that will generate sufficient heat or sparks to ignite combustible and/or flammable materials. Combustible materials are substances that will freely support combustion once ignited. The following activities are examples of hot work; however, there may be more that are applicable at specific locations: Welding, Drilling, Flame Cutting, Grinding, Portable Heaters, and Electrical Tools/Equipment (that are not explosion proof or intrinsically safe), Sandblasting operations (static charges), Operation of combustion engines (lawn mowers, vehicles, etc.)

Permitted Area – Any area where hot work is to take place and combustible or flammable vapors are or could exist even in an abnormal condition. Examples include: gasoline dispensers, tank vents, underground storage tank manways, fills or other access points, above ground storage tanks, excavations, or any equipment that has the potential to emit combustible or flammable vapors.

Responsibility

The contractor or work supervisor is responsible to ensure that all hot work is authorized and permitted prior to starting work.

Incident Reporting

All incidents involving personal injury or property damage, or which had the potential to cause significant injury or damage, must be immediately reported to BP site management per the RM Incident Notification Guidance Manual. All information and assistance must be made available upon request to assist with an incident investigation, if necessary.

Download the MS Word Document

In order to view this document properly, you will need Microsoft Word 2000 or later.

Hot Work Safety Permit (172Kb)

REMEDIATION MANAGEMENT
HOT WORK SAFETY PROCEDURES

It is imperative that all workers understand that no task is so important or so urgent that it cannot be done safely.

SEQUENCE & SAFE METHOD OF WORK

THE CONTRACTOR MUST COMPLETE THE FOLLOWING ITEMS AND REVIEW WITH WORKERS BEFORE HOT WORK STARTS

- Hot Work Permit requirements must be in place
- Job specific emergency procedures and notifications must be developed, reviewed with workers, and readily available
- Ensure the work area is free of non-essential personnel, equipment, combustible materials and vehicles
- All appropriate personal protective equipment (PPE) must be in use by workers (see Appendix B – PPE)
- A Fire Watch, with appropriate authority and responsibility, must be provided with the correct fire extinguishing equipment and combustible gas testing meter (see Appendix A – Duties of the Fire Watch)
- Blinding, isolation, and purging of equipment (with appropriate Lock-outs) must have been completed
- Ensure that at least two escape routes with unobstructed access are provided
- Before signing the permit, the person who writes the Hot Work Permit is responsible for determining if acceptable working conditions exist and verifying that permit is complete, including air testing, and that specified equipment is in place (see Appendix A – Duties of Permit Writer)
- The Fire Watch must assist hot work activities by providing fire protection, air monitoring, and being constantly aware for fire hazards (see Appendix A – Duties of the Fire Watch)
- Upon completion of the hot work, the fire watch takes appropriate action to verify that no fire hazards exist before departing the area

PURPOSE AND SCOPE

The purpose of this procedure is to assure an ***Incident and Injury Free Workplace*** where personnel perform hot work at BP sites. BP requires all employees and contractors performing work on behalf of BP to follow these requirements. These safety requirements are considered as a minimum and are mandatory.

Additional measures may be required on a site or job specific basis by BP or by government regulations such as the applicable OSHA standard (29 CFR 1926. 352) which may be obtained from the OSHA web site at http://www.osha.gov/index.html. Below is a summary of BP's safety requirements. It is the responsibility of the parties conducting the work to understand and follow all required safety regulations and practices.

DEFINITIONS

Hot Work - any work that will generate sufficient heat or sparks to ignite combustible and/or flammable materials. Combustible materials are substances that will freely support combustion once ignited. The following activities are examples of hot work; however, there may be more that are applicable at specific locations: Welding, Drilling, Flame Cutting, Saw Cutting, Grinding, Portable Heaters, Electrical Tools/Equipment (that are not explosion proof or intrinsically safe), Sandblasting operations (static charges), Operation of combustion engines (lawn mowers, vehicles, etc.)

Permitted Area – Any area where hot work is to take place and combustible or flammable vapors are or could exist even in an abnormal condition. Examples include: gasoline dispensers, tank vents, underground storage tank manways, fills or other access points, above ground storage tanks, excavations, or any equipment that has the potential to emit combustible or flammable vapors.

RESPONSIBILITY

The contractor or work supervisor is responsible to ensure that all hot work is authorized and permitted prior to starting work.

REQUIRED SAFETY PRACTICES

There shall be no work with open flames conducted at a BP site without express written permission from a BP Remediation Management Site EBM or Project Manager. A Hot Work Permit (See Appendix C) must be issued before hot work is performed within 35 feet of an area where combustible or flammable vapors are or could exist, even in an abnormal condition.

INCIDENT REPORTING

All incidents involving personal injury or property damage, or which had the potential to cause significant injury or damage, must be **immediately** reported to

BP site management per the RM Incident Notification Guidance Manual. All information and assistance must be made available upon request to assist with an incident investigation, if necessary.

APPENDIX A - EMPLOYEE TRAINING; ASSIGNED DUTIES OF THE HOT WORK PERMIT ISSUER; ASSIGNED DUTIES OF THE FIRE WATCH

EMPLOYEE TRAINING

- Employees must be trained so they know the relevant aspects of safety regarding hot work. Training should include:
  - Types and locations of potential fire hazards at the facility and specifically near the work area.
  - Work practices and techniques to control hot work exposures.
  - Atmospheric testing procedures.
  - Use of fire extinguishers, atmosphere monitoring equipment, and ventilation equipment.
- Employees should be trained prior to conducting their first hot work, when assigned duties change, or when the employee's supervisor believes it to be appropriate.

ASSIGNED DUTIES OF THE HOT WORK PERMIT ISSUER

The person who writes the Hot Work Permit is responsible for determining if acceptable working conditions exist. The permit writer is responsible for the following duties:

- Must know the hazards of hot work.
- Must verify by checking that the permit is complete, including testing and specified equipment in place, before endorsing the permit.
- Terminate the permit when the work is complete, or when conditions not allowed under the permit arise.
- Determine at periodic intervals that acceptable hot work conditions are maintained.

ASSIGNED DUTIES OF FIRE WATCH

- The contractor or work supervisor is responsible for assigning a fire watch when hot work is within 35 feet of a potential combustible or flammable vapor source. The fire watch must be trained in the proper use of a fire extinguisher. The supervisor must review the duties with the fire watch which include:
  - Understanding the location and nature of the hot work
  - Survey the area to be sure the necessary fire protection equipment is in place and ready for use
  - Survey the area for combustible or flammable materials
  - Remain in the area while the work is being performed and remain in constant communication range with person(s) doing the hot work
  - Never leave the work area for any reason without a replacement
  - When walls are involved in hot work, each side requires a fire watch
- The fire watch must be in the ready position at all times when hot work is being performed. The ready position consists of being attentive and having the fire extinguisher in position prior to the start of work. The fire extinguisher must be nearby while the hot work is being performed. The fire extinguisher must be returned to its designated location when the hot work is complete. The fire extinguisher must not be discharged unless a fire actually occurs.
- The fire watch must periodically survey the area with a direct-reading combustible gas meter to ensure the work area is suitable for hot work. The work must stop immediately if the combustible gas meter registers 10% or greater of the lower explosive level (L.E.L.) in the atmosphere.
- The fire watch is authorized to stop the hot work whenever work conditions become unsafe or if the work description on the permit is exceeded. The supervisor must be notified for any "stop work" situation.
- The fire watch shall be equipped with the personal protective equipment needed to perform the work safely, such as properly shaded goggles for working with welders.

APPENDIX B – JOB SAFETY ANALYSIS (JSA) AND PERSONAL PROTECTIVE EQUIPMENT (PPE)

JOB HAZARD ANALYSIS		
TASK	HAZARDS	CONTROLS

Hot Work	• Fire/Explosion • Explosive vapors/gas • Temperature variables • Electrical hazards	1. Test work area oxygen and LEL with meter. 2. Assure all appropriate equipment isolation, shutdowns, LOTO, purging and barricading have been conducted to reduce flammability risk and atmospheric hazards. This includes isolation of workspace from the general public. 3. Provide necessary equipment including PPE. 4. Monitor work area continuously with air tester and document readings on permit. 5. Designate specific persons to provide fire watch. 6. Complete Hot Work Permit. 7. Perform hot work for as long as permit conditions are met. 8. Reviews permit procedure if any problems arise. 9. All work stops if conditions or scope of works changes. 10. Close out permit when work has been completed

PERSONAL PROTECTIVE EQUIPMENT (PPE)

When a hazardous situation is recognized, steps should be immediately taken to eliminate the hazard either by engineering revision or by changing work methods. If it is not practical to eliminate the hazard, then personal protective equipment (PPE) must be used.

PPE Requirements

1.	**High Visibility Vest:**	Always
2.	**Glasses:**	Always
3.	**Goggles, face shield:**	When fluid splash may exist or hammering, drilling, or where dust and loose material may blow
4.	**Welding goggles:**	When performing welding or while required to work in close proximity to a welding operation
5.	**Head protection (hard hats):**	Always
6.	**Gloves (chemical resistant):**	When working with gasoline or other solvents or corrosive chemicals
7.	**Gloves (leather or cotton):**	When working with sharp or abrasive materials
8.	**Long pants and long-sleeve work shirt:**	During any work at BP facilities
9.	**Fire Resistant Clothing**:	For working where there is a high risk of a flash fire
10.	**Steel-toe Boots/Shoes (leather):**	Always

APPENDIX C – HOT WORK – PERMIT TO WORK

Facility	Purpose of Entry/Nature of Work (ex. Tank cleaning, inspection, welding, cutting abrasive blasting, etc.
Specific Equipment/Area covered by ermit	Contractor Name
Hazards of the Space (ex. Combustible gas, confined space, power lines, water, ice, open systems, energy sources, etc.)	

CHECK	Y/N/NA	DETAILS BELOW	CHECK	Y/N/NA	DETAILS BELOW
O. Has a Safety PSR been done?			4. Earthing and bonding correctly applied?		
A. Have a plant and equipment been thoroughly:			5. Work to be kept wet with water?		
1, Depressurized			6. Are spark/flash screens/barriers in place?		
2. Drained?			7. Hot work site isolated/roped off?		
3. Isolated - By Blanking			8. Has product movement in the vicinity been stopped?		
- By Disconnection			9. Are PRVs vented to safe areas?		
4. Steamed			10. Fire protection checked/in place? List		
5. Water Flushed			11. Is a firewatch/fire brigade required and organized?		
6. Ventilated - Natural			12. Air Test: Was instrument calibrated prior to day's use? _____ Instrument type & serial # _____ Calibration results: %LEL _____ 0_2_____		
- Mechanical					
B. 1. Are sewers, pits & drains and contaminated ground Within 15m of worksite sealed?			C. Is access and exit provided?		
2, Combustible material removed & leaks controlled?			D. "Lead" precautions necessary/taken?		
3. Equipment, eg. Welder, compressor, correctly sited?			E. Has electrical equipment been isolated and tagged?		
			F. Has wind direction been considered?		

Gas Tests Required: Retest & assess hazards when conditions change and upon return to work after breaks and lunch		Time	Oxygen%	Combustible (%LEL)	CO (ppm)		Other (list, ex. Lead)
Monitoring Results Tests Performed by:	Safety Limits						

PERSONAL PROTECTION REQUIRED (STATE YES OR NO)

EYES	EARS	HANDS	FEET	BREATHING	BODY - OTHER	
☐ Goggles	☐ Ear Protection	☐ PVC Gloves	☐ Safety Shoes	☐ Canister Mask	☐ Safety Harness	☐ Overalls
☐ Shield		☐ Gloves	☐ Rubber Safety Shoes	☐ Air Supplied Respirator	☐ PVC Suit	☐ Hard Hat
☐ Safety Glasses		☐ Gauntlets			☐ Reflective Vest	

SPECIAL INSTRUCTIONS & WORK INSTRUCTIONS

AUTHORISATION TO CARRY OUT WORK

I CERTIFY THAT THE ABOVE EQUIPMENT/SITE IS SAFE TO CARRY OUT HOT WORK BY PERSONS SUBJECT TO THE SPECIFIED REQUIREMENTS

ISSUED BY: ..... PERMIT VALID FROM DATE ...../...../..... .....AM/PM

COUNTERSIGNED: ..... TO DATE ..../...../..... ..... AM/PM

I UNDERSTAND THE NATURE OF THE WORK AND CERTIFY THAT THE ABOVE CONDITIONS WILL BE OBSERVED AT ALL TIMES

RECEIVED BY – CONTRACTOR/EMPLOYEE ..... DATE ...../...../.....

WORK COMPLETED		**WORK HAND BACK**	
Time	Contractor/Employee	Time	Received by Site Manager
Date	.....	Date	.....

DISPLAY OF PERMIT

- ORIGINAL COPY – SHALL BE CLEARLY DISPLAYED AT THE WORK SITE ALONG WITH THE ATW FORM WITH CONTRACTOR/EMPLOYEE PERFORMING WORK.
- SITE MANAGERS COPY TO BE GIVEN BY HAND TO THE SITE MANAGER.
- ISSUERS COPY TO BE KEPT BY THE PERSON ISSUING THE PERMIT.
- UPON COMPLETION OF WORK AND ACCEPTANCE, THE CONTRACTOR/EMPLOYEE SHALL SIGN AND HAND BACK PERMIT TO THE SITE MANAGER FOR CLOSEOUT. COPY OF THE PERMIT TO BE KEPT WITH THE SITE HASP.

PERMIT ISSUE

Permits are to be issued by a person to whom the authority has been delegated. They may be issued by non-plant staff with delegated authority in which case they shall be countersigned by Site Manager.

PERMIT VALIDITY

If work period exceeds one shift the permit must be re-endorsed below at each shift change, and at least daily, and any change of work control by either issuing Officer or the Recipient prior to the commencement of work.

NOTE – ENSURE GAS-FREE CERTIFICATE IS RE-ENDORSED

RE-ENDORSED BY DATE ....../....../......	**RE-ENDORSED BY** DATE ....../....../......
....	....
Signature of Person Authorised to Re-endorse	Signature of Person Authorised to Re-endorse
....	....
Valid for ....(date)	Valid for ....(date)
Recipient	Recipient ....

RE-ENDORSED BY DATE ....../....../......	**RE-ENDORSED BY** DATE ....../....../......
....	....
Signature of Person Authorised to Re-endorse	Signature of Person Authorised to Re-endorse
....	....
Valid for ....(date)	Valid for ....(date)
Recipient	Recipient ....

RE-ENDORSED BY DATE ....../....../......	**RE-ENDORSED BY** DATE ....../....../......
....	....
Signature of Person Authorised to Re-endorse	Signature of Person Authorised to Re-endorse
....	....
Valid for ....(date)	Valid for ....(date)
Recipient	Recipient ....

RE-ENDORSED BY DATE ....../....../......	**RE-ENDORSED BY** DATE ....../....../......
....	....
Signature of Person Authorised to Re-endorse	Signature of Person Authorised to Re-endorse
....	....
Valid for ....(date)	Valid for ....(date)
Recipient	Recipient ....

Document Type: Health, Safety, Security & Environmental (HSSE) Practice
Document Title: Ground Disturbance Practice

Authority: Global RM HSSE Manager
Issue Date: 08/24/2005
Revision Date: 08/24/2005
Custodian: Global RM HSSE Manager
Scope of Application: Remediation Management
Next Review Date: 08/24/2007

1.0 Purpose/Scope

This practice establishes minimum Ground Disturbance requirements for all RM and contractor personnel involved with ground disturbance activities as defined in this document. Contract Partners or RM Operating Regions may deem it necessary to have more stringent requirements in place for specific tasks, based on past work experience and hazard assessments.

2.0 Definitions

Ground Disturbance: Any indentation, interruption, intrusion, excavation, construction or other activity in the earth's surface as a result of work being carried out that result in the penetration of the ground. For example:

- Any mechanical excavation (e.g., back hoes, augers) that results in penetration of the ground;
- Any manual ground penetration (e.g., digging with shovels, hand augering, hammering of stakes) greater than 12 inches;
- Any mechanical scraping activity (e.g., road grading, bull dozing) that results in penetration of the ground, including company owned or maintained property, work sites and roads.

Exceptions:

- Using fill dirt as an alternative to grading low spots or areas where erosion has occurred, or using stockpiled material, does not constitute a Ground Disturbance activity.
- Snow removal does not constitute Ground Disturbance.

A risk assessment, action plan and an MOC approved by the Environmental Business Manager (EBM) and the Contractor Project Manager is required to vary from these requirements.

Federal, State or local regulations, which are more stringent than the RM developed guidance, will be practiced.

Competent Person: Each Contract Partner and RM Operating Region shall designate individuals (employee or contract) who are capable, through experience and/or training, to identify existing and predictable hazards in the surroundings or working conditions which are hazardous or dangerous to personnel and who has authorization to take prompt corrective measures to eliminate such hazards. The primary responsibility for ensuring a safe ground disturbance as defined by this procedure is assigned to the "Competent Person". The Competent Person must demonstrate that they have the knowledge, training, and experience required to perform the defined role. The Competent Person(s) will be clearly identified in the Health and Safety Plan.

Qualified Equipment Operator: A person who through experience and/or training and with the endorsement of their employer is competent to operate equipment used in ground disturbance activities. Operator's qualifications shall be verified and Operators shall be approved by a competent person prior to beginning work activity.

Qualified Line Finder: A person who through experience and/or training and with the endorsement of their employer is competent to operate line finding equipment used to locate buried facilities prior to ground disturbance activities. A Competent Person shall verify qualified Line Finder's qualifications and Qualified Line Finder shall be approved prior to beginning work activity.

3.0 General Requirements – Reporting and Distribution

A Competent Person must ensure that the appropriate regional One Call Notification Center has been notified of all planned ground disturbance activities and a request for line locates has been registered.

The Competent Person will affirm that all lines have been located and marked prior to any ground disturbance activity. When in doubt, a Competent Person will investigate the possibility of underground lines and contact appropriate parties as needed for verification.

Documented Contractor procedures, which are equivalent or more stringent, shall satisfy all requirements of this practice.

4.0 Training

All Environmental Business Managers or Project Managers shall ensure that all employees and/or contractors who participate in Ground Disturbance activity, or who may be directly affected, are trained through an accredited Ground Disturbance Training Program prior to their involvement in the activity and retrained every three years thereafter.

- Each Competent Person shall receive training in the recognition of applicable hazards associated with Ground Disturbance activities and corrective measures required to eliminate such hazards.

- Each Qualified Equipment Operator shall be instructed in the safe competent operation of equipment used in Ground Disturbance activities.

- Each Qualified Line Finder shall be instructed in the safe competent operation of equipment used to locate buried facilities prior to Ground Disturbance activities.

The training shall include a mechanism of ensuring employee and or contractor's comprehension of the Ground Disturbance process and/or associated equipment.

The training shall include rules and techniques for authorization and the means that will be used for enforcement of the program.

Retraining shall be provided whenever there is a change in the Ground Disturbance process, whenever job changes or changes in equipment or processes present a new hazard, or when there is reason to believe that there are inadequacies in the employee and/or contractor's knowledge.

All training must be documented, including the date and names of employees and/or contractors attending the training.

5.0 Key Responsibilities

Environmental Business Managers and Project Managers shall ensure that the requirements of this program are implemented and enforced.

All employees involved in or impacted by Ground Disturbance activities shall comply with this process and any documented site-specific procedures.

6.0 Procedure/Process

6.1 Line location & Plot Plan

Available records shall be referenced and contacts made to determine the existence and location of underground lines to facilities and utilities in the vicinity of the work area.
It is a Competent Person's responsibility to ensure that all available sources of information have been obtained and cross-referenced to ensure as far as is reasonable and practical the existence of all lines to facilities and underground utilities. Sources of information, including but not limited to, the following must be referenced when applicable to the job:

1. One Call (or similar state recognized program) - provides a listing of companies who registered buried structures in the proposed work area. Some public utilities and private companies are not members of One Call. A 48-hour waiting period is required prior to beginning work. Some emergency situations require less waiting time. State, regional, and local laws should be researched and followed.
2. Consult area operations personnel - plot plans, lines to facilities maps, or lease drawings (as available) must be obtained and discussed with area operations personnel. Experienced company personnel familiar with area operations may have knowledge of lines to facilities not otherwise documented.
3. Visible Company Markers - Check the work area for lines to facilities or utility markers and ensure the company named has been contacted to supply any additional information regarding underground facilities. (Never rely solely on company markers for location purposes.) Markers may have been knocked down or removed at some point in the past and may have been repositioned inaccurately.)
4. Visible Indicators – Look for any sign of ground disturbance within the proposed work area, including the search/controlled zone. This may include lines to facilities, power lines, gas co-ops, utility cables, new clearings, road construction, pipeline signs, settlement, vegetation color changes, or growth. If there is any visual sign of activity that is not reflected on the survey drawing, re-surveying should be considered.
5. Discussion with Landowner - Landowner and/or Tenant may also have additional knowledge of buried utilities not documented elsewhere and should be contacted when reasonable and practical.
6. A plot plan, lines to facilities map or drawing indicating the location of all underground facilities and utilities as determined from Item 2 above, shall be provided (or has been prepared) and is available for reference at the work site. The map or drawing shall be included in the Health and Safety Plan ("HASP").

7. Ground disturbance activities must not proceed without a plot plan, lines to facilities map or drawing clearly indicating the number of lines to facilities or utilities, line sizes, locations and alignments. Available plot plans or lease drawings must be reviewed and cross-referenced with other sources of information (as noted in Item 2) to ensure they are accurate and complete. Plot plan should be retained in the HASP.
8. If a plot plan; lines to facilities map or lease drawing is not available, but it has been determined from referencing other sources of information that buried lines do indeed pass at a minimum within 10 feet of both sides of the dig zone, a drawing must be prepared. This drawing may be hand drawn but must reflect all available information as accurately as possible.

6.2 Approvals & Agreements Required

- Approvals and agreements (as applicable) either verbal or written have been obtained.
- Pipeline Permits and Licenses (new installation, additions to existing lines, abandonment's) have been obtained.
- Notification to utility line owner regarding intent to cause ground disturbance within the controlled area, at a minimum 10 feet on both sides of dig zone has been completed and documented.
- Notifications of landowners and or tenant, where deemed reasonable and practical have been completed and documented.
- Facility crossing agreements have been obtained.

6.3 Pre-Job Safety Meeting

A pre-job safety meeting including Job Safety Analysis, Risk Assessment Tool, and Emergency Action Plan review will be held. Appropriate documentation of such meeting will be kept with the Authorization to Work ("ATW") within the HASP.

The following topics (as a minimum) have been discussed and the meeting minutes (with signed attendance list) have been recorded and retained on file.

- Review of potential hazards, safe work procedure, permitting requirements, etc.
- Agreement that ground disturbance does not occur unless a Competent Person is present at the job site.
- Mechanical excavation equipment must not be used to dig within 2' (or greater if specified in the crossing agreement) of a known underground facility. A spotter must be in place for all excavation within proximity of any underground utility and the 2' no dig zone adequately marked.
- Utilization of pick axes shall be evaluated and approved by a Competent Person prior to use.
- Agreement that all workers have the right and obligations to stop or refuse to carry out any work procedures they feel are unsafe.
- Personal protective equipment requirements, including applicability of fire retardant clothing use, will be evaluated.
- All accidents, injuries, and near miss incidents must be reported. A site-specific Emergency Response Plan must be in place and reviewed at the pre-job

meeting. The Emergency Action Plan must include facility contact names and phone numbers.

6.4 Facility Marking

All known surface and sub-surface structures and utilities, as noted on the plot plan, utility line map, or drawing, that pass within the controlled area of an underground facility (minimum 10 ft of both sides of the dig zone) have been located, identified and marked to indicate location and alignment.

A Qualified Line Finder who is familiar with the area or lease and has in his possession a copy of the location drawing shall conduct line-locating procedures, lines, utility service map, or plot plan and shall verify and confirm that all suspected or actual lines are clearly marked on the plot plan.

The area to be disturbed will be "walked" (swept) using a "line finder". If required the area will be electronically swept using four separate "grid patterns" (e.g., North - South pattern followed by East - West as well as angular pattern) to ensure maximum detection capabilities.

The lines must be clearly identified and marked, at a minimum, within 10 ft of both sides of the dig zone.

The following color – code is to be used: (unless State requirements indicate otherwise)

Proposed Excavation – White
Temporary Survey Markings – Pink
Electrical – Red
Gas & Oil – Yellow
Potable Water – Blue
Drainage/Sewers - Green
Communication - Orange
Non-potable Water – Purple

Plot plans; lines to facility map, and drawing must be cross-referenced with the placement of markers prior to mechanical excavation to ensure there are no apparent inconsistencies. If there are inconsistencies between the plot plan, lines to facility maps, or drawing and placement of stakes, another line location must be done to verify correct line location and alignment.

The feasibility of locating all underground facilities and utilities and formal updating of plot plans, lines to facility maps, and lease drawings shall be considered prior to new construction involving ground disturbance activities.

6.5 Exposing Underground Facilities

All underground facilities and utilities within 2 ft of the line have been exposed as practicable to verify location, line size, and alignment. All underground facilities and utilities, identified at facility crossing shall be exposed as is practicable.

6.6 Procedures for exposing flagged line(s):

1. Use Hydrovac to expose line.
    A. If this is not effective proceed with the following steps
2. Set up excavating equipment parallel and to one side of flagged line
3. Start trenching 2 feet from flagged line
4. Hand Dig or use Hydrovac to remove soil/rock from the 2 foot area between trench and flags
5. If this is a line crossing you may choose to repeat steps 2 and 3 on the opposite side of the flagged utility line

Note: You must always maintain 2 foot of clearance around utility line with mechanical equipment unless conditions exist as listed below. Hydrovac may be used as manual removal of soil/rock

6.7 Procedures for exposing lines with mechanical equipment that are suspected to be in the dig zone but cannot be identified or located by using established procedures (e.g. line locate equipment):

1. De-energize line if possible
2. With the Competent Person on site, cautiously remove soil in the following manner.
    - Probe area to be excavated. If you are able to probe 10 inches then you can remove 5 inches of soil. Repeat process until utility line is located with probe. Mechanical equipment can only penetrate half of the distance that was probed.
    - Once exact location of line is determined, place probe to one side and commence excavation on that side no closer than 2 feet to known utility line.
    - Dig down beside utility line until the line can be exposed by hand to determine its orientation.
    - Use same procedure on opposite side of utility line.
    - Remove dirt plug underneath the utility line by hand. Mechanical equipment may be used if you are able to maintain 2 foot of clearance from utility line. (e.g. boring)

6.8 Probing procedures:

- Probe the area to be mechanically exposed (width of ditch)
- Probe every few inches and never wider than the size of line to be exposed.
- Probe diagonal to underground facility.

Note: Never allow mechanical device (e.g. bucket or teeth of bucket) to penetrate more than ½ of the depth you are able to probe.

6.9 Procedures for exposing utility lines that can't be exposed by hand digging or Hydrovac:

1. Competent Person shall be on site during line exposure.
2. Utility line must be properly isolated (locked and tagged out).

3. For all pressurized utility lines, the line will be properly de-pressured and vented to the atmosphere.
4. Mechanical equipment will be allowed to remove soil from around utility line closer than 2 feet following proper probing procedures. Caution should be taken not to damage coating or casing of utility line.
5. If during this process there is damage to exterior or coating, report immediately to the Competent Person.
6. Competent Person will supervise repairs and document damage.

Note: If a Third Party owns utility line being crossed, owners' specific procedures will be followed. If the line cannot be found by using one of the methods listed above the Competent Person shall develop a procedure for locating the line. This procedure will require an MOC along with review and approval from the RM EBM and the Contract Partner Project Manager.

When installing a new utility line that runs parallel (at a minimum within 10 ft) to an existing line, the existing line must be exposed to confirm location and then at appropriate intervals to confirm alignment. Intervals will be determined by the Competent Person and be indicated on the Plot Plan.

When installing a new utility line that runs parallel to an existing line the operations should maintain a distance of 5 ft. In circumstances where a 5 ft. distance cannot be maintained, (i.e. ROW agreements or landowner restrictions) additional precautions must be implemented, (i.e. expose line at shortened intervals to ensure orientation.) Where the excavation is complex or involves multiple lines, Hydrovac (if available) should be considered as the correct means for exposing of lines.

6.10 Additional Permits

Additional Safe Work Permits (e.g., Hot Work, Confined Space Entry, etc.) as per the Control of Work Practice may be required. If the ground disturbance activity is complex or involves multiple lines-specific procedures must be developed.

Ground disturbance activities in certain areas may require specific environmental permits be obtained or plans be developed. Projects such as remediation, location restoration, and site development may need Ground Disturbance Permits. Items such as wetland disturbance permit, dredging or filling permits, storm water discharge permits, and critical or sensitive habitat determination and pollution prevention plans may also be required.

6.11 Overhead Lines

Overhead power lines that may pose a hazard during movement of equipment must also be clearly indicated and clearances must be maintained. Barricades shall be placed to prevent equipment from inadvertently crossing under a line. A spotter is required to assist equipment operators in maintaining required safe distances while equipment is in operation.

7.0 Key Documents/Tools/References

- Occupational Safety and Health Administration, Department of Labor; 29 CFR, 1926.652.
- gHSEr Element # 5, “Facility Design and Construction”
- gHSEr Element # 6, “Operations and Maintenance”

REMEDIATION MANAGEMENT GROUND DISTURBANCE (EXCAVATION) SAFETY PROCEDURES

It is imperative that all workers understand that no task is so important or so urgent that it cannot be done safely.

SEQUENCE & SAFE METHOD OF WORK

- An OSHA(or equivalent) defined Competent Person must be onsite at all times while trenching work is underway and before employees enter the trench
- An Excavation Inspection – Permit to Work form must be completed prior to beginning excavation and daily or whenever conditions change that may affect the excavation
- A pre-task JSA must be completed and reviewed with employees prior to beginning work
- Preliminary planning work (identification of underground utilities, spoil layout, emergency procedures) must be completed prior to beginning work
- RM Traffic Control Procedures (which includes barricades, PPE, and other procedures to protect employees and customers) must be followed
- Once work begins, employees are not allowed in the trench while equipment is digging
- A means must be provided for employees to safely enter and exit from the trench (such as with ladders)
- Cave-in protection, such as sloping, shoring and/or trench boxes, must be used when the trench depth reaches 4 feet and deeper
- The potential for a hazardous atmosphere always exists in an excavation; therefore, air monitoring must be done prior to personnel entering the excavation and work suspended if a hazardous atmosphere is detected.

PURPOSE AND SCOPE

The purpose of this procedure is to assure an ***Incident and Injury Free Workplace*** when personnel work in excavations and trenches at BP sites. BP requires all employees and contractors performing work on behalf of BP to follow these procedures. These safety procedures are considered as a minimum requirement and are mandatory. Additional safety measures may be required on a job of site specific basis by BP or by government regulations such as the OSHA standards for working in excavation (trenches) (29 CFR 1926.650, 1926.651, and 1926.652) which may be obtained from the OSHA web site at http://www.osha.gov/index.html.

Below is a summary of BP's safety requirements for contractors performing trenching and excavations. It is the responsibility of the parties conducting the work to understand and follow all required safety regulations and practices. In all cases where regulations or job conditions require more stringent requirements than stated in these procedures, the more stringent rules shall be applied.

DEFINITIONS

Benching - A method of protecting employees from cave-ins by excavating the sides of a trench excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.

Competent person – Defined by OSHA as a person capable of identifying existing and predictable hazards in the surroundings, or working conditions that are unsanitary, hazardous, or dangerous to employees. Authorized to take prompt corrective measures to eliminate existing and predictable hazards and to stop work when required. A competent person should have and be able to demonstrate the following:

1. Training experience, and knowledge of:
    - Soil Analysis
    - Use of protective systems
2. Ability to detect:
    - Conditions that could result in cave-ins
    - Failures in protective systems
    - Hazardous atmospheres
    - Other hazards including those associated with confined spaces

Shield (shield system) - A structure that is able to withstand the forces imposed on it by a cave-in and thereby protect employees within the confines of the structure. Shields can be permanent structure or can be designed to be portable and moved along as work progresses. Also known as trench box or trench shield.

Shoring (shoring system) - A structure such as a metal hydraulic, sheet pile, mechanical or timber shoring system that supports the sides of an excavation and which is designed to prevent cave-ins.

Sloping (sloping system) - A method of protecting employees from cave-ins by excavating to form the sides of an excavation which are inclined away from the excavation. The angle of incline varies with differences in such factors as the soil type, environmental conditions, and depth of exposure.

Required Safety Practices

Competent Person

A competent person shall be placed in charge of all excavations. The competent person shall be responsible for classification of the soil type, daily inspections of excavations and protective systems, monitoring water removal and equipment, and determining if the excavation is safe for personnel to work in it.

Inspections

The competent person shall conduct inspections for evidence of possible cave-in, failure of protective systems, hazardous atmospheres, and other hazardous conditions when there is an employee exposure:

- Daily and before the start of each shift
- As dictated by the work being done in the trench
- After every rainstorm
- After other events that could increase hazards, such as snowstorm, thaw, earthquake, dramatic change in weather, etc.
- When fissures, tension cracks, sloughing, undercutting, water seepage, bulging at the bottom, or other similar conditions occur
- When there is a change in the size, location, or placement of the spoil pile
- When there is any indication of change or movement in adjacent structures
- For excavations 4 feet or greater in depth, an **Excavation Inspection Form** shall be filled out for each inspection (see Appendix C for sample form)

Soil Type

Because most excavations at BP sites will be conducted in areas where the soil has been previously disturbed, **excavations shall be made to meet the requirements for Type B or Type C soils** as covered below:

- **Type B** - Medium stability: silt, sandy loam, medium clay and unstable dry rock; previously disturbed soils unless otherwise classified as Type C; soils that meet the requirements of Type A soil but are fissured or subject to vibration.
- **Type C** - Least stable: gravel, loamy sand, soft clay, submerged soil or dense, heavy unstable rock, and soil from which water is freely seeping.

Excavating Soil

- Underground utilities must be located and marked before excavation begins.
- Employees are not allowed in the excavation while heavy equipment is digging.

Spoil

Temporary spoil shall be placed so that:
It is no closer than 2 feet from the surface edge of the excavation (permanent spoil should be placed a much greater distance from the excavation)

- Loose rock or soil from the temporary spoil will not fall on employees in the trench
- It channels rainwater and other run-off water away from the excavation
- It cannot accidentally run, slide, or fall back into the excavation

Surface Crossing of Trenches

Surface crossing of trenches should not be made unless absolutely necessary. When necessary, they are only permitted under the following conditions:

- Vehicle crossings must be designed by and installed under the supervision of a Registered Professional Engineer
- Walkways or bridges must:
  - Have a minimum clear width of 20 inches
  - Be fitted with standard rails
  - Extend a minimum of 24 inches past the surface edge of the trench

Ingress and Egress

- Trenches four feet or more in depth shall be provided with a fixed means of egress
- Spacing between ladders or other means of egress must be such that a worker will not have to travel more than 25 feet laterally to the nearest means of egress
- Ladders must be secured and extend a minimum of 36 inches above the landing.
- Metal ladders should not be used when electric utilities are present

Hazardous Atmospheres and Confined Spaces

- Personnel shall not be permitted to work in hazardous and / or toxic atmospheres
- Testing must be conducted before personnel enter a trench or excavation and then periodically to ensure the excavation remains safe
- The frequency of testing should be increased if equipment or processes used in the trench may alter the atmosphere
- Operations involving hazardous atmospheres must be conducted in accordance with OSHA or other application federal requirements.
- Excavations may qualify as confined spaces. When this occurs, compliance with BP's Confined Space Safety Procedure is also required.

Standing Water and Water Accumulation

The following requirements for controlling water accumulation must be provided if personnel must work in the excavation:

- Personnel must not work in excavations where standing water has accumulated
- Water removal or de-watering equipment, such as pumps, are installed and monitored by a competent person
- Personnel must exit from excavations during rainstorms
- Trenches must be carefully inspected by a competent person after each rain and before personnel are permitted to re-enter

Benching, Sloping, Shoring, and Shielding

- All excavations or trenches four feet or greater in depth shall be appropriately benched, shored, or sloped according to OSHA or other applicable federal requirement.
- Excavations or trenches 20 feet deep or greater must have a protective system designed by a Registered Professional Engineer.
- Excavation under the base of a foundation footing or wall requires a support system designed by a Registered Professional Engineer.
- Sidewalks and pavement shall not be undermined unless a support system or another method of protection is provided to protect from possible collapse.

Incident Reporting

All incidents involving personal injury or property damage, or which had the potential to cause significant injury or damage, must be **immediately** reported to BP per the RM Incident Notification Guidance.

APPENDIX A – JOB SAFETY ANALYSIS (JSA) - EXCAVATIONS

TASK	HAZARDS	CONTROLS
Setting up, digging, and working in the excavation	• Vehicular impact, unauthorized entry to work zone	• Compliance with RM's "Traffic Control Procedures is required. At all times during construction or maintenance jobs, employees must wear reflective vests or other clothing marked with or made of reflective or high-visibility materials. All work will be conducted in barricaded controlled work areas to ensure that an effective protective buffer zone between maintenance activities and the public will be maintained at all times. If a job will take longer than a single construction day, a minimum of 6 foot high chain link fencing shall be used to control entry into the work zone when no other means f access control is present.
Working in the excavation	• Fire	• There is to be no smoking on site. • There will be no open flame activities permitted on site. • Hot work of any kind performed in an excavation or anywhere on site requires a hot work permit. Hot work includes cutting, grinding, drilling, threading, scraping, welding, or use of electric tools. • During fuel deliveries all work must stop and all workers must exit the excavation. • Workers are to be made aware of the defined lateral hazard zone at Retail sites: o Within 14ft of the dispensing nozzle o Within 3ft of the vent outlet. o Contractors will provide 20-pound ABC type fire extinguishers. o Contractors must be aware of the location of the service station fire fighting equipment and emergency procedures. • Any fire incident must be promptly reported to the Site Supervisor and the EBM per the RM Incident Notification Guidance Manual.
Working in the excavation	• Atmospheric hazards	• Atmospheres must be tested prior to entry. Confined Space Procedures may apply.
	• Falling, suspended loads	• Never stand on or under suspended loads. Hoisting & Lifting Procedures apply.
	• Slips, trips, falls	• Proper housekeeping is a primary precaution against slips, trips and falls. Housekeeping will be a continuous activity and for sites such as Retail locations, the site will remain in "broom swept" condition at all times. Unused tools and debris shall be properly stored at all times. No worker may stand within six feet of the edge of an excavation deeper than six feet without proper fall protection procedures in place.

APPENDIX B - PERSONAL PROTECTIVE EQUIPMENT (PPE)

PERSONAL PROTECTIVE EQUIPMENT (PPE)

When a hazardous situation is recognized, steps should be immediately taken to eliminate the hazard either by engineering revision or by changing work methods. If it is not practical to eliminate the hazard, then personal protective equipment (PPE) must be used.

PPE Requirements

1. **High visibility vest:** Always
2. **Glasses, goggles or face shield:** Always
3. **Ear plugs or muffs:** when working in close proximity to loud noises (jack hammer, vacuum trucks, lawn care)
4. **Hard hat:** Always
5. **Fall protection equipment:** when working at heights above six feet or within six feet from an exposed edge
6. **Gloves (chemical resistant):** when working with gasoline or other solvents or corrosive chemicals
7. **Gloves (leather or cotton):** when working with sharp or abrasive materials
8. **Long pants and long-sleeve work shirt:** Always
9. **Steel-toe Boots or shoes (leather):** Always

APPENDIX C – INSPECTION FORM – PERMIT TO WORK

EXCAVATION INSPECTION AND ENTRY AUTHORIZATION FORM - PERMIT TO WORK

LOCATION:	**DATE:**
TIME OF INSPECTION:	
WEATHER CONDITIONS:	**APPROX. TEMP:**
CREW LEADER:	**COMPETENT PERSON:**

DIMENSIONS:			
	DEPTH =		
	TOP =	W	L
	BOTTOM =	W	L

SOIL TYPE:	**TESTED:**
❑ Solid rock (most stable)	❑ Yes
❑ Average soil	❑ No
❑ Fill material	
❑ Loose sand	

Yes No	**HAZARDOUS CONDITIONS**
❑ ❑	..... Saturated soil / standing or seeping water
❑ ❑	..... Cracked or fissured wall(s)
❑ ❑	..... Bulging wall(s)
❑ ❑	..... Floor heaving
❑ ❑	..... Frozen soil
❑ ❑	..... Super-imposed loads
❑ ❑	..... Vibration
❑ ❑	..... Depth greater than 10'

PROTECTION METHODS:
(Walls MUST be vertical—NO voids)
SHORING
❑ Timber
❑ Pneumatic
❑ Hydraulic
❑ Screw Jacks
❑ Trench Shield
UNEVEN, IRREGULAR WALLS
❑ Trench Box
Sloping: q 1:1 (45°) q 1 ½:1 (34°)

Yes No	**ENVIRONMENTAL CONDITIONS:**
❑ ❑	Gas detector used?
❑ ❑	Confined space permit issued?

PLACEMENT OF SPOILS & EQUIPMENT	
❑ ❑	..... Spoils at least two feet from edge of trench
❑ ❑	..... Equipment at least two feet from edge
❑ ❑	..... Backhoe at end of trench
❑ ❑	..... Compressor, etc. at remote location
LADDER LOCATION	
❑ ❑	..... Located in protected area
❑ ❑	..... Within 25 feet of safe travel
❑ ❑	..... Secured
❑ ❑	..... Extends 36 inches above the landing
❑ ❑	..... Leads to safe landing

OTHER:	
❑ ❑	Shoring equip. & materials inspected prior to use?
❑ ❑	Is trench SAFE to enter?

SPECIAL INSTRUCTIONS & WORK INSTRUCTIONS	
	Work Order #

All unsafe conditions must be corrected prior to excavation entry. If any hazardous conditions are observed, the excavation must be immediately evacuated and no one is allowed to re-enter until corrective action has been taken.	**TO BE FILLED OUT BY OSHA DEFINED COMPETENT PERSON** **Excavation Entry Authorized By:** **COMPETENT PERSON**

AUTHORISATION TO CARRY OUT WORK

I CERTIFY THAT THE ABOVE EQUIPMENT/SITE IS SAFE TO CARRY OUT WORK BY PERSONS SUBJECT TO THE SPECIFIED REQUIREMENTS

ISSUED BY: ..... PERMIT VALID FROM DATE ...../...../..... .....AM/PM

COUNTERSIGNED: ..... TO DATE ..../...../..... ..... AM/PM

I UNDERSTAND THE NATURE OF THE WORK AND CERTIFY THAT THE ABOVE CONDITIONS WILL BE OBSERVED AT ALL TIMES

RECEIVED BY – CONTRACTOR/EMPLOYEE ..... DATE ...../...../.....

WORK COMPLETED	**WORK HAND BACK**
Time ..... Contractor/Employee	Time ..... Received by Site Manager
Date	Date ....

Management of Change Procedure

Authority:	RM HSSE	**Custodian:**	Global HSSE Manager
Scope:	All RM Projects	**Issuing Dept.**	RM HSSE
Issue Date:	26/08/2005	**Last Revision Date:**	
Control Status:	Unified Controlled Document	**Next Revision Date:**	

1.0 Scope and Applicability of Procedure

The purpose of an MOC procedure is to identify and control risks, both real and potential, associated with change. An MOC procedure ensures that the impact of changes which affect the health and safety of personnel or impact the environment are recognized, reviewed, approved, communicated and documented.

Management of Change applies to changes in operating parameters, equipment, maintenance practices, product compositions, chemicals used, procedures, equipment and personnel. There are also regulatory changes to consider which may impact permit limits or other operating parameters. These changes could take the form of new or emerging regulations, or changes to existing regulations. Changes may be permanent, or temporary in nature.

2.0 Scope of Responsibility

The MOC Owner is typically the project manager or other designated responsible person who is driving implementation of the proposed change. The reviewers will likely be technical experts familiar with the impacts that could be caused by the proposed change. The approver is a sufficient level of management to authorize the change, given the potential impacts. Input from the appropriate Regional HSSE Coordinator should also be sought. The HSSE Manager's input should be sought for changes that would impact the entire business unit or are determined to be of high potential risk.

The MOC proposal document must clearly spell out;

- who is responsible for initiating the MOC (the MOC Owner),
- who needs to review and approve the MOC,
- who manages the MOC process,
- how the MOC is communicated to affected personnel and what review/audit process is in place.

3.0 Scope of Training and Qualification

All persons involved in the MOC proposal, screening, review and approval must be competent in the MOC process. Competency will be assessed through either the specific training completed, or level of experience, in the operations or business process undergoing the change.

4.0 Scope of Procedures

MOC is a step-by-step process with several distinct actions to be considered. There are no detailed procedures for these actions, however below is guidance on how they should be completed.

4.1 Change Proposal

The process starts when a proposed change is identified. The originator of the proposed change must clearly communicate and document a description of the proposed change and the reason for the change to the appropriate level of authority. The merits of the change are evaluated and any additional action required to properly address the change are determined. An individual (MOC Owner) is appointed to own the MOC process for the change (typically the originator, but not necessarily). Input from Operations and Maintenance personnel, consultants, contractors, the appropriate Regional HSSE Coordinator and others should be solicited as appropriate to confirm the conceptual basis for the change.

4.2 Screening

Once the need for the change has been verified, the change must be screened to see if the formal MOC process is required. In general, if health, safety, the environment, or regulatory compliance is potentially impacted, the MOC process will need to be employed. If a change is determined to not require the formal MOC process, this conclusion needs to be documented. A series of five (5) questions has been prepared to help in the screening process. Answering "Yes" to any of these questions will require a formal MOC review.

1. Does the change have the potential to adversely affect performance in any of the key HSE performance areas (Injuries, Spills, etc.)?
2. Is there a change in the materials of construction, physical layout, or control logic, or is it a new installation?
3. Is there a change in operating conditions beyond currently established limits?
4. Is there a change in legal, regulatory or company policy requirements?
5. Does the change involve significant organizational or personnel changes?

4.3 Review

Once a change has been confirmed to require entry into the formal MOC process, the first step is to evaluate potential health, safety and environmental implications. A review must be conducted to assess risks associated with implementing the proposed change, as well as the potentially hazardous effects that the change could have on the process, procedures and personnel. This review should also ensure that all applicable codes, standards, design specifications, compatibility assessments, permit requirements and generally accepted engineering practices have been followed. Feedback from affected parties should be considered as well. Applicable sign-off must be obtained prior to the change implementation.
The MOC Owner should enlist qualified individuals to perform the necessary reviews. The number and qualifications of these reviewers will depend on the nature of the change under consideration.
The level of detail for each review should reflect the complexity of the proposed change and the potential impacts the change poses. A risk analysis checklist may be prepared to verify compliance with standards.

Results of the MOC review process must be documented. The MOC Owner should maintain a record of the review, with signatures as required. This should be done even if no substantive comments arose during the review.

4.4 **Authorization**

A defined authorization process must be in place and documented. Approvals must be received before the change is actually implemented. Authorization should not be given until all reviews have been conducted, consequences identified in these reviews have been addressed, any regulatory requirements have been addressed, all affected personnel are trained and all documentation related to the change process has been completed.

4.5 **Implementation**

The implementation phase covers proper communication of the change including documentation. Training must be identified, then completed and documented prior to implementation. Following implementation, verification is necessary to ascertain that the change was made as intended and is functioning as anticipated. All drawings, procedures, etc. should be updated in a timely fashion.

4.6 **Condition Limits**

If the change is temporary, there must be a prescribed time limit set. Any extension beyond the intended time frame or modification to the stipulations of a temporary change requires another MOC review. If a change is approved within given physical parameters, another MOC review is required if any of these parameters are to be exceeded.

4.7 **Emergency Changes**

A provision for changes of an emergency nature may be described. Typically this would provide a mechanism for authorizing an emergency change and a requirement to have the change formally reviewed in a prompt fashion.

4.8 **Record Retention**

A record retention policy should be spelled out that is in concurrence with RM policy. Typically this will define how long the MOC forms and supporting information are to be kept and where they are located. Permanent changes require permanent updates to any existing documentation (drawings, procedures, training materials, etc.) in a timely fashion.

REMEDIATION MANAGEMENT
TRAFFIC CONTROL
SAFETY PROCEDURES

It is imperative that all workers understand that no task is so important or so urgent that it cannot be done safely.

SEQUENCE & SAFE METHOD OF WORK

1. Prior to conducting an on-site work, inform the site manager that the work is about to get underway. The planned sequence and site layout, detailing work zones, delivery and storage areas, must be confirmed. Planned tanker delivery schedules at Retail sites are to be confirmed. All hot work MUST STOP during any actual fuel deliveries.
2. Establish a controlled work area using high visibility fencing, pylon and flag system at least 4 feet high, or accordion-type collapsible barriers, to guide traffic and secure the working area where traffic impact might occur. The secured work area must have positioned around it (at all times) an adequate number of high-visibility barricades to ensure adequate warning to pedestrians, motorists, and workers. Barricades shall be spaced so that vehicles cannot drive in between them. A vehicle (car, van, or truck) may be used to barricade the workspace. A combination of barricading methods may be used as appropriate to the job.
3. If work areas will move, agree with the site manager a sequence of zoning.
4. Delivery and storage of materials at the work site must be in agreement with the site manager.
5. Proper signage is to be placed at each approach to the barricades to guide the visitors / public away.
6. Protect barricading materials against effects of bad weather, such as high winds, and be sure that barricades / fencing etc. are properly secured.
7. If public roads / bicycle paths / footpaths etc. have to be closed or rerouted make sure that local regulations are followed and permits are in place. Use the proper traffic guiding equipment and make arrangements for the security and work visibility at all times.
8. After work is completed and the work area is cleaned, remove the barricades and report the work status to the service station manager, who may wish to inspect the finished work.

PURPOSE AND SCOPE

The purpose of this procedure is to assure an *Incident and Injury Free Workplace* when personnel work at BP sites. BP requires all employees and contractors performing work on behalf of BP to follow these procedures. These safety procedures are considered as a minimum requirement and are mandatory.
Additional safety measures may be required on a job or site-specific bass by BP or by government regulations including those at the OSHA web site at http://www.osha.gov/index.html. Below is a summary of BP's safety requirements for contractors performing work at BP sites.

It is the responsibility of the parties conducting the work to understand and follow all required safety regulations and practices. In all cases where regulations or job conditions require more stringent requirements than stated in these procedures, the more stringent rules shall be applied. See Appendix A for Job Safety Analysis. See Appendix B for personal protective equipment (PPE) requirements. See attached "Traffic Safety Awareness" guidance.

INCIDENT REPORTING

All incidents involving personal injury or property damage, or which had the potential to cause significant injury or damage, must be promptly reported to BP site management per Remediation Management's Incident Notification Guidance Manual. All information and assistance must be made available upon request to assist with an incident investigation, if necessary.

APPENDIX A – JOB SAFETY ANALYSIS (JSA)

Principle Work Steps	Hazards	Controls	Permits/ Training
Work Control	General	The responsible party shall: • Review daily, with the Site Manager, the daily logistics, plan and work sequence for additional hazards and adjustments. • Establish parking and traffic for on-site equipment, operational vehicles and personal vehicles plus rubbish containers during the works process.	
Protection of the Public / workforce	• Injury • Property damage	• Every worker will be made aware that our greatest responsibility is assuring that no harm come to any member of the public or employee. • The need for pre-planning work activities and having all the necessary protective equipment available is essential to conducting business. • All work will be conducted in barricaded controlled work areas to ensure that an effective protective buffer zone between construction activities and the public will be maintained at all times. <u>If practical, a vehicle should be used as a primary barricade in the dominant flow of traffic.</u>	.
Fire Prevention	• Fire • Personal injury • Property damage	• There will be no smoking on site. • There will be no open flame activities permitted on site. • Employees will look for any gasoline spills that may result from a customer "topping off" their tank and spilling fuel on the ground. Hazard should be removed before performing any work in the area. • During fuel deliveries at Retail sites, all operation of power tools will cease until the delivery is complete. • Workers are to be aware that there are defined lateral hazard zones: o Within 14 feet of the dispensing nozzle o Within three feet of the vent outlet. • Contractors will provide a fire extinguisher - ABC type. • Contractors must be aware of the location of the service station fire extinguishing equipment and emergency procedures. • Any fire incidents must be reported to the Site manager.	Fire prevention and the concerns associated with working at a gasoline dispensing facility are to be regular topics at toolbox safety meetings.
Setting up barricades	• Unauthorized persons entering into the hazard zone • Serious injury	• Prior to the beginning of the work, barricades will be set up to ensure that persons who are not involved in the activities are kept at a safe distance. • An appropriate number of barricades will be in place to ensure a continuous separation from other activities on site. • It is the responsibility of the supervisor in charge to ensure that the established safe zone is adequate to provide the necessary margin of protection for other persons on site. • If in the opinion of the responsible supervisor, an adequate safety zone cannot be assured, all other construction related activities will cease. • If multiple jobs have to be carried out, the contractor supervisors from each trade on site will meet to establish hazards for each job. They must honor the established work zones of all trades on site. • Daily inspection of the barricades to ensure proper placement.	• Training for all other trades to inform that the established hazard zone is off limits to all unauthorized persons. • Regular toolbox meetings are to be held to secure coordination / communication.

APPENDIX B – PERSONAL PROTECTIVE EQUIPMENT (PPE)

<u>PERSONAL PROTECTIVE EQUIPMENT (PPE)</u>

When a hazardous situation is recognized, steps should be immediately taken to eliminate the hazard either by engineering revision or by changing work methods. If it is not practical to eliminate the hazard, then personal protective equipment (PPE) must be used.

<u>PPE Requirements</u>

1.	High visibility vest:	Always
2.	Glasses:	Always
3.	Goggles, or face shield:	When drilling, grinding or chipping materials and for chemical splash protection
4.	Ear plugs or ear muffs:	When working in close proximity to loud noises (jack hammer, vacuum trucks, lawn care)
5.	Hard hat:	Always
6.	Fall protection equipment:	When working at heights above six feet and/or within six feet from an exposed edge
7.	Long pants and long-sleeve work shirt:	During any work at BP facilities
8.	Steel-toe Boots or Shoes (leather):	During any work at BP facilities
9.	Gloves:	Cotton or leather when handling sharp or abrasive materials/chemical resistant for gasoline.

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Trenching and Excavation

Sequence and Safe Method of Work

- An OSHA (or equivalent) defined Competent Person must be onsite at all times while trenching work is underway and before employees enter the trench
- An Excavation Inspection – Permit to Work form must be completed prior to beginning excavation and daily or whenever conditions change that may affect the excavation
- A pre-task JSA must be completed and reviewed with employees prior to beginning work
- Preliminary planning work (identification of underground utilities, spoil layout, emergency procedures) must be completed prior to beginning work. Where available or required, calls should be made to local utility locating services such as the “One Call” in the US and Canada
- RM Traffic Control Procedures (which includes barricades, PPE, and other procedures to protect employees and customers) must be followed
- Once work begins, employees are not allowed in the trench while equipment is digging
- A means must be provided for employees to safely enter and exit from the trench (such as with ladders)
- Cave-in protection, such as sloping, shoring and/or trench boxes, must be used when the trench depth reaches 4 feet and deeper
- The potential for a hazardous atmosphere always exists in an excavation; therefore, air monitoring must be done prior to personnel entering the excavation and work suspended if a hazardous atmosphere is detected.

Purpose and Scope

The purpose of this procedure is to assure an Incident and Injury Free Workplace when personnel work in excavations and trenches at BP sites. BP requires all employees and contractors performing work on behalf of BP to follow these procedures. These safety procedures are considered as a minimum requirement and are mandatory. Additional safety measures may be required on a job or site-specific basis by BP or by government regulations such as the OSHA standards for working in excavation (trenches) (29 CFR 1926.650, 1926.651, and 1926.652)

which may be obtained from the OSHA web site at http://www.osha.gov/index.html.

Below is a summary of BP's safety requirements for contractors performing trenching and excavations. It is the responsibility of the parties conducting the work to understand and follow all required safety regulations and practices. In all cases where regulations or job conditions require more stringent requirements than stated in these procedures, the more stringent rules shall be applied.

Definitions

Benching – A method of protecting employees from cave-ins by excavating the sides of a trench excavation to form one or a series of horizontal levels or steps, usually with vertical or near-vertical surfaces between levels.

Competent person – Defined by OSHA as a person capable of identifying existing and predictable hazards in the surroundings, or working conditions that are unsanitary, hazardous, or dangerous to employees. Authorized to take prompt corrective measures to eliminate existing and predictable hazards and to stop work when required. A competent person should have and be able to demonstrate the following:

1. Training experience, and knowledge of:
• Soil analysis
• Use of protective systems
2. Ability to detect:
• Conditions that could result in cave-ins
• Failures in protective systems
• Hazardous atmospheres
• Other hazards including those associated with confined spaces

Shield (shield system) – A structure that is able to withstand the forces imposed on it by a cave-in and thereby protect employees within the confines of the structure. Shields can be permanent structure or can be designed to be portable and moved along as work progresses. Also known as trench box or trench shield.

Shoring (shoring system) – A structure such as a metal hydraulic, sheet pile, mechanical or timber shoring system that supports the sides of an excavation and which is designed to prevent cave-ins.

Sloping (sloping system) – A method of protecting employees from cave-ins by excavating to form the sides of an excavation which are inclined away from the excavation. The angle of incline varies with differences in such factors as the soil type, environmental conditions, and depth of exposure.

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In order to view this document properly, you will need Microsoft Word 2000 or later.

Trenching Excavation Permit (166Kb)

REMEDIATION MANAGEMENT
TRENCHING AND EXCAVATION
SAFETY PROCEDURES

It is imperative that all workers understand that no task is so important or so urgent that it cannot be done safely.

SEQUENCE & SAFE METHOD OF WORK

- An OSHA(or equivalent) defined Competent Person must be onsite at all times while trenching work is underway and before employees enter the trench
- An Excavation Inspection – Permit to Work form must be completed prior to beginning excavation and daily or whenever conditions change that may affect the excavation
- A pre-task JSA must be completed and reviewed with employees prior to beginning work
- Preliminary planning work (identification of underground utilities, spoil layout, emergency procedures) must be completed prior to beginning work. Where available or required, calls should be made to local utility locating services such as the "One Call" in the US and Canada
- RM Traffic Control Procedures (which includes barricades, PPE, and other procedures to protect employees and customers) must be followed
- Once work begins, employees are not allowed in the trench while equipment is digging
- A means must be provided for employees to safely enter and exit from the trench (such as with ladders)
- Cave-in protection, such as sloping, shoring and/or trench boxes, must be used when the trench depth reaches 4 feet and deeper
- The potential for a hazardous atmosphere always exists in an excavation; therefore, air monitoring must be done prior to personnel entering the excavation and work suspended if a hazardous atmosphere is detected.

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The purpose of this procedure is to assure an *Incident and Injury Free Workplace* when personnel work in excavations and trenches at BP sites. BP requires all employees and contractors performing work on behalf of BP to follow these procedures. These safety procedures are considered as a minimum requirement and are mandatory. Additional safety measures may be required on a job of site specific basis by BP or by government regulations such as the OSHA standards for working in excavation (trenches) (29 CFR 1926.650, 1926.651, and 1926.652) which may be obtained from the OSHA web site at http://www.osha.gov/index.html.

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1. Training experience, and knowledge of:
    - Soil Analysis
    - Use of protective systems
2. Ability to detect:
    - Conditions that could result in cave-ins
    - Failures in protective systems
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    - Other hazards including those associated with confined spaces

Shield (shield system) - A structure that is able to withstand the forces imposed on it by a cave-in and thereby protect employees within the confines of the structure. Shields can be permanent structure or can be designed to be portable and moved along as work progresses. Also known as trench box or trench shield.

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Sloping (sloping system) - A method of protecting employees from cave-ins by excavating to form the sides of an excavation which are inclined away from the excavation. The angle of incline varies with differences in such factors as the soil type, environmental conditions, and depth of exposure.

REQUIRED SAFETY PRACTICES

Competent Person

A competent person shall be placed in charge of all excavations. The competent person shall be responsible for classification of the soil type, daily inspections of excavations and protective systems, monitoring water removal and equipment, and determining if the excavation is safe for personnel to work in it.

Inspections

The competent person shall conduct inspections for evidence of possible cave-in, failure of protective systems, hazardous atmospheres, and other hazardous conditions when there is an employee exposure:

- Daily and before the start of each shift
- As dictated by the work being done in the trench
- After every rainstorm
- After other events that could increase hazards, such as snowstorm, thaw, earthquake, dramatic change in weather, etc.
- When fissures, tension cracks, sloughing, undercutting, water seepage, bulging at the bottom, or other similar conditions occur
- When there is a change in the size, location, or placement of the spoil pile
- When there is any indication of change or movement in adjacent structures
- For excavations 4 feet or greater in depth, an Excavation Inspection Form shall be filled out for each inspection (see Appendix C for sample form)

Soil Type

Because most excavations at BP sites will be conducted in areas where the soil has been previously disturbed, excavations shall be made to meet the requirements for Type B or Type C soils as covered below:

- Type B - Medium stability: silt, sandy loam, medium clay and unstable dry rock; previously disturbed soils unless otherwise classified as Type C; soils that meet the requirements of Type A soil but are fissured or subject to vibration.
- Type C - Least stable: gravel, loamy sand, soft clay, submerged soil or dense, heavy unstable rock, and soil from which water is freely seeping.

Excavating Soil

- Underground utilities must be located and marked before excavation begins.
- Employees are not allowed in the excavation while heavy equipment is digging.

Spoil

Temporary spoil shall be placed so that:
It is no closer than 2 feet from the surface edge of the excavation (permanent spoil should be placed a much greater distance from the excavation)

- Loose rock or soil from the temporary spoil will not fall on employees in the trench
- It channels rainwater and other run-off water away from the excavation
- It cannot accidentally run, slide, or fall back into the excavation

Surface Crossing of Trenches

Surface crossing of trenches should not be made unless absolutely necessary. When necessary, they are only permitted under the following conditions:

- Vehicle crossings must be designed by and installed under the supervision of a Registered Professional Engineer
- Walkways or bridges must:
  - Have a minimum clear width of 20 inches
  - Be fitted with standard rails
  - Extend a minimum of 24 inches past the surface edge of the trench

Ingress and Egress

- Trenches four feet or more in depth shall be provided with a fixed means of egress
- Spacing between ladders or other means of egress must be such that a worker will not have to travel more than 25 feet laterally to the nearest means of egress
- Ladders must be secured and extend a minimum of 36 inches above the landing.
- Metal ladders should not be used when electric utilities are present

Hazardous Atmospheres and Confined Spaces

- Personnel shall not be permitted to work in hazardous and / or toxic atmospheres
- Testing must be conducted before personnel enter a trench or excavation and then periodically to ensure the excavation remains safe
- The frequency of testing should be increased if equipment or processes used in the trench may alter the atmosphere
- Operations involving hazardous atmospheres must be conducted in accordance with OSHA or other application federal requirements.
- Excavations may qualify as confined spaces. When this occurs, compliance with BP's Confined Space Safety Procedure is also required.

Standing Water and Water Accumulation

The following requirements for controlling water accumulation must be provided if personnel must work in the excavation:

- Personnel must not work in excavations where standing water has accumulated
- Water removal or de-watering equipment, such as pumps, are installed and monitored by a competent person
- Personnel must exit from excavations during rainstorms
- Trenches must be carefully inspected by a competent person after each rain and before personnel are permitted to re-enter

Benching, Sloping, Shoring, and Shielding

- All excavations or trenches four feet or greater in depth shall be appropriately benched, shored, or sloped according to OSHA or other applicable federal requirement.
- Excavations or trenches 20 feet deep or greater must have a protective system designed by a Registered Professional Engineer.
- Excavation under the base of a foundation footing or wall requires a support system designed by a Registered Professional Engineer.
- Sidewalks and pavement shall not be undermined unless a support system or another method of protection is provided to protect from possible collapse.

INCIDENT REPORTING

All incidents involving personal injury or property damage, or which had the potential to cause significant injury or damage, must be immediately reported to BP per the RM Incident Notification Guidance Manual.

APPENDIX A – JOB SAFETY ANALYSIS (JSA) - EXCAVATIONS

TASK	HAZARDS	CONTROLS
Setting up, digging, and working in the excavation	• Vehicular impact, unauthorized entry to work zone	• Compliance with RM's "Traffic Control Procedures is required. At all times during construction or maintenance jobs, employees must wear reflective vests or other clothing marked with or made of reflective or high-visibility materials. All work will be conducted in barricaded controlled work areas to ensure that an effective protective buffer zone between maintenance activities and the public will be maintained at all times. If a job will take longer than a single construction day, a minimum of 6 foot high chain link fencing shall be used to control entry into the work zone when no other means of access control is present.
Working in the excavation	• Fire	• There is to be no smoking on site. • There will be no open flame activities permitted on site. • Hot work of any kind performed in an excavation or anywhere on site requires a hot work permit. Hot work includes cutting, grinding, drilling, threading, scraping, welding, or use of electric tools. • During fuel deliveries all work must stop and all workers must exit the excavation. • Workers are to be made aware of the defined lateral hazard zone at Retail sites: o Within 14ft of the dispensing nozzle o Within 3ft of the vent outlet. o Contractors will provide 20-pound ABC type fire extinguishers. o Contractors must be aware of the location of the service station fire fighting equipment and emergency procedures. • Any fire incident must be promptly reported to the Site Supervisor and the EBM per the RM Incident Notification Guidance Manual.
Working in the excavation	• Atmospheric hazards	• Atmospheres must be tested prior to entry. Confined Space Procedures may apply.
	• Falling, suspended loads	• Never stand on or under suspended loads. Hoisting & Lifting Procedures apply.
	• Slips, trips, falls	• Proper housekeeping is a primary precaution against slips, trips and falls. Housekeeping will be a continuous activity and for sites such as Retail locations, the site will remain in "broom swept" condition at all times. Unused tools and debris shall be properly stored at all times. No worker may stand within six feet of the edge of an excavation deeper than six feet without proper fall protection procedures in place.

APPENDIX B - PERSONAL PROTECTIVE EQUIPMENT (PPE)

PERSONAL PROTECTIVE EQUIPMENT (PPE)

When a hazardous situation is recognized, steps should be immediately taken to eliminate the hazard either by engineering revision or by changing work methods. If it is not practical to eliminate the hazard, then personal protective equipment (PPE) must be used.

PPE Requirements

1. High visibility clothing: Always
2. Safety glasses, goggles or face shield: Always
3. Ear plugs or muffs: When working in close proximity to loud noises (jack hammer, vacuum trucks, lawn care)
4. Hard hat: Always
5. Fall protection equipment: When working at heights above six feet or within six feet from an exposed edge
6. Gloves (chemical resistant): When working with gasoline or other solvents or corrosive chemicals
7. Gloves (leather or cotton): When working with sharp or abrasive materials
8. Long pants and long-sleeve work shirt: Always
9. Steel-toe Boots or shoes (leather): Always

APPENDIX C – INSPECTION FORM – PERMIT TO WORK

EXCAVATION INSPECTION AND ENTRY AUTHORIZATION FORM - PERMIT TO WORK					
LOCATION:					**DATE:**
TIME OF INSPECTION:					
WEATHER CONDITIONS:					**APPROX. TEMP:**
CREW LEADER:					**COMPETENT PERSON:**
DIMENSIONS:	**DEPTH =**			Yes No	**HAZARDOUS CONDITIONS**
	TOP =	W	L	❑ ❑	.....Saturated soil / standing or seeping water
	BOTTOM =	W	L	❑ ❑	.....Cracked or fissured wall(s)
SOIL TYPE:		**TESTED:**		❑ ❑	.....Bulging wall(s)
❑ Solid rock (most stable)		❑ Yes		❑ ❑	.....Floor heaving
❑ Average soil		❑ No		❑ ❑	.....Frozen soil
❑ Fill material				❑ ❑	.....Super-imposed loads
❑ Loose sand				❑ ❑	.....Vibration
				❑ ❑	.....Depth greater than 10’
PROTECTION METHODS:				**PLACEMENT OF SPOILS & EQUIPMENT**	
(Walls MUST be vertical—NO voids)				❑ ❑	.....Spoils at least two feet from edge of trench
SHORING				❑ ❑	.....Equipment at least two feet from edge
❑ Timber				❑ ❑	.....Backhoe at end of trench
❑ Pneumatic				❑ ❑	.....Compressor, etc. at remote location
❑ Hydraulic				**LADDER LOCATION**	
❑ Screw Jacks				❑ ❑	.....Located in protected area
❑ Trench Shield				❑ ❑	.....Within 25 feet of safe travel
UNEVEN, IRREGULAR WALLS				❑ ❑	.....Secured
❑ Trench Box				❑ ❑	.....Extends 36 inches above the landing
Sloping:	**q 1:1 (45°)**	**q 1 ½:1 (34°)**		❑ ❑	.....Leads to safe landing
Yes No	**ENVIRONMENTAL CONDITIONS:**			**OTHER:**	
❑ ❑	Gas detector used?			❑ ❑	Shoring equip. & materials inspected prior to use?
❑ ❑	Confined space permit issued?			❑ ❑	Is trench SAFE to enter?
SPECIAL INSTRUCTIONS & WORK INSTRUCTIONS					
❑ **Utility Locate Complete**				**Work Order #**	

NOTE		
	All unsafe conditions must be corrected prior to excavation entry. If any hazardous conditions are observed, the excavation must be immediately evacuated and no one is allowed to re-enter until corrective action has been taken.	**TO BE FILLED OUT BY OSHA DEFINED COMPETENT PERSON** **Excavation Entry Authorized By:** **COMPETENT PERSON**

AUTHORISATION TO CARRY OUT WORK

I CERTIFY THAT THE ABOVE EQUIPMENT/SITE IS SAFE TO CARRY OUT WORK BY PERSONS SUBJECT TO THE SPECIFIED REQUIREMENTS

ISSUED BY: ……. PERMIT VALID FROM DATE ……/……/…… …….AM/PM

COUNTERSIGNED: …… TO DATE …./……/…… ……. AM/PM

I UNDERSTAND THE NATURE OF THE WORK AND CERTIFY THAT THE ABOVE CONDITIONS WILL BE OBSERVED AT ALL TIMES

RECEIVED BY – CONTRACTOR/EMPLOYEE …….. DATE ……/……/……

WORK COMPLETED		**WORK HAND BACK**	
Time	Contractor/Employee	Time	Received by Site Manager
Date ….....	……	Date	……

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Working at Heights

Sequence and Safe Method of Work

- Fall prevention systems must always be used as the primary method of working safely at heights. If fall prevention systems are not practical, then fall protection systems must be used.
- Prior to working at heights, the Site Supervisor is to be informed that the work is beginning. The planned work sequence, details of site layout and work zones, product delivery & storage areas, and location of storage tank vents must be confirmed. Planned tanker delivery schedules at Retail sites must be confirmed, so that there will be no conflict with elevated or hot work.
- All work at heights on structures or buildings to which storage tank vent pipes are attached MUST STOP during actual fuel deliveries.
- Before work is to occur at any height, a specific JSA must be conducted for each work situation. JSA must address all safety aspects of the task and assure that correct procedures are applied and appropriate equipment is available. Refer to Appendix B for Personal Protective Equipment PPE) requirements, as a guide to determine necessary PPE for the task. Rescue methods must also be specified.
- Working high and accessing areas above six feet:
    - Ladders may only be used for access to areas that are protected by a Fall Arrest System. Ladder use must conform to standards such as the OSHA requirements (29 CFR 1926.1053).
    - Ladder must be tied off to fixing point by the first user
    - No work over six feet shall be performed from a ladder. Ladder is to be used for access only. Ladder may only be used for short-term work less than six feet from the surface. Any exceptions need to be noted in the “special instructions” section of the permit.
    - Scaffolding must be erected by a competent person in accordance.
    - Scaffolding may be used for high work and also for access to other high work areas that are protected by a Fall Arrest System

    - Aerial lift (cherry picker) may be used for access to roofs and canopies (excluding new Harmony solar canopies). The aerial lift basket can only be lowered onto the roof when it is more than six feet from the edge. Body (restraint) harness must be worn at all times while in the aerial lift basket. The use of an aerial lift must conform to the requirements.
    - Scissor lift may be used for high work and access to other high work areas protected by a Fall Arrest system. If a scissors lift is used for access, a ladder must also be present for emergency exit
- Working within six feet of an exposed edge:
    - Fall Arrest System must be installed whenever work is to occur within six feet of an exposed edge. An exposed edge is any edge where a fall of over six feet can occur.
    - Fall Arrest System shall not be used as the main protection system unless there are no alternatives.
    - If a Fall Arrest System is used, then rescue must be assured within 10 to 15 minutes.
    - Scheduled maintenance tasks must be performed using a permanently installed Fall Arrest System for work that is to occur within six feet of an exposed edge. A task that is repeated at regular intervals is considered scheduled maintenance.
    - Unscheduled tasks that occur within six feet of an exposed edge can be done using a temporary Fall Arrest System.

Purpose and Scope

The purpose of this procedure is to assure an Incident and Injury Free Workplace where personnel work at or above heights of six feet at BP sites. BP requires all contractors performing work on behalf of BP to follow these procedures. These safety procedures are to be considered a minimum requirement and are mandatory.
Additional safety measures on a site or job specific basis may be required by BP or government regulations such as the OSHA standard (29CFR 1926.1053, 1926.453, 1926.500, 1926.501, 1926.104)) which may be obtained from the OSHA website at http://www.osha.gov/index.html. Below is a summary of BP's safety requirements for contractors working at heights above six feet. It is the responsibility of the parties conducting the work to understand and follow all required safety regulations and practices. In all cases where OSHA regulations or job conditions require more stringent safety requirements than stated in this procedure, the more stringent rules shall be applied.

Definitions

Fall Prevention - Engineering controls, systems, design elements, construction standards, or equipment intended to provide a safe work platform and to eliminate the risk of falling. Examples of fall prevention are: parapet walls; properly constructed safety guardrail systems; properly constructed scaffolding; edge warning and demarcation systems; and scissor lift with protective railing installed.

Fall Protection - Personal protective gear and systems designed, installed, and worn for the purpose of preventing injury in the event of a fall from heights greater than six feet. An example of fall protection is a full body safety harness

with properly sized shock absorbing lanyards attached to properly designed and installed anchor points or static lines.
Fall Arrest System - A system used to arrest (stop) an employee in a fall from a working level. It consists of an anchorage, connectors, a body belt or body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these.
Competent Person – a person capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

Required Safety Practices

The following minimum requirements shall be applied when working at heights at RM Project Sites. BP defines “working at heights” as work performed where the lowest part of the body is above six feet high, or within six feet of an edge where a fall of six feet or greater may occur. When working at any height lower than six feet, a Job Safety Analysis (JSA) must be completed. Refer to Appendix A as a guide for completing a JSA. A completed Permit to Work (see Appendix C) must be prepared by each contractor and submitted to the RM EBM or Project Manager for review prior to beginning each task involving working at heights above six feet.

Download the MS Word Document

In order to view this document properly, you will need Microsoft Word 2000 or later.

Working at Heights Permit (148Kb)

REMEDIATION MANAGEMENT WORKING AT HEIGHTS SAFETY PROCEDURES

It is imperative that all workers understand that no task is so important or so urgent that it cannot be done safely.

SEQUENCE & SAFE METHOD OF WORK

1. Fall prevention systems must always be used as the primary method of working safely at heights. If fall ***prevention*** systems are not practical, then fall ***protection*** systems must be used.
2. Prior to working at heights, the Site Supervisor is to be informed that the work is beginning. The planned work sequence, details of site layout and work zones, product delivery & storage areas, and location of storage tank vents must be confirmed. Planned tanker delivery schedules at Retail sites must be confirmed, so that there will be no conflict with elevated or hot work.
3. All work at heights on structures or buildings to which storage tank vent pipes are attached MUST STOP during actual fuel deliveries.
4. Before work is to occur at any height, a specific JSA must be conducted for each work situation. JSA must address all safety aspects of the task and assure that correct procedures are applied and appropriate equipment is available. Refer to Appendix B for Personal Protective Equipment PPE) requirements, as a guide to determine necessary PPE for the task. Rescue methods must also be specified.
5. Working high and accessing areas above six feet:
   a) **Ladders** may only be used for access to areas that are protected by a Fall Arrest System. Ladder use must conform to standards such as the OSHA requirements (29 CFR 1926.1053).
   - Ladder must be tied off to fixing point by the first user
   - No work over six feet shall be performed from a ladder. Ladder to be used for access only

   b) **Scaffolding** must be erected by a competent person in accordance.
   - Scaffolding may be used for high work and also for access to other high work areas that are protected by a Fall Arrest System

   c) **Aerial lift** (cherry picker) may be used for access to roofs and canopies (excluding new Harmony solar canopies). The aerial lift basket can only be lowered onto the roof when it is more than six feet from the edge. Body (restraint) harness must be worn at all times while in the aerial lift basket. The use of an aerial lift must conform to the requirements.

   d) **Scissor lift** may be used for high work and access to other high work areas protected by a Fall Arrest system. If a scissors lift is used for access, a ladder must also be present for emergency exit
6. Working within six feet of an exposed edge:
   - Fall Arrest System must be installed whenever work is to occur within six feet of an exposed edge. An exposed edge is any edge where a fall of over six feet can occur.
   - Fall Arrest System shall not be used as the main protection system unless there are no alternatives.
   - If a Fall Arrest System is used, then rescue must be assured within 10 to 15 minutes.
   - Scheduled maintenance tasks must be performed using a permanently installed Fall Arrest System for work that is to occur within six feet of an exposed edge. A task that is repeated at regular intervals is considered scheduled maintenance.
   - Unscheduled tasks that occur within six feet of an exposed edge can be done using a temporary Fall Arrest System.

PURPOSE AND SCOPE

The purpose of this procedure is to assure an ***Incident and Injury Free Workplace*** where personnel work at or above heights of six feet at BP sites. BP requires all contractors performing work on behalf of BP to follow these procedures. These safety procedures are to be considered a minimum requirement and are mandatory.
Additional safety measures on a site or job specific basis may be required by BP or government regulations such as the OSHA standard (29CFR 1926.1053, 1926.453, 1926.500, 1926.501, 1926.104)) which may be obtained from the OSHA website at http://www.osha.gov/index.html. Below is a summary of BP's safety requirements for contractors working at heights above six feet. The OSHA standard (29CFR 1926.1053, 1926.453, 1926.500, 1926.501, 1926.104)) may be obtained from the OSHA website at http://www.osha.gov/index.html. It is the responsibility of the parties conducting the work to understand and follow all required safety regulations and practices. In all cases where OSHA regulations or job conditions require more stringent safety requirements than stated in this procedure, the more stringent rules shall be applied.

REQUIRED SAFETY PRACTICES

The following minimum requirements shall be applied when working at heights at RM Project Sites. BP defines "working at heights" as work performed where the lowest part of the body is above six feet high, or within six feet of an edge where a fall of six feet or greater may occur. When working at any height lower than six feet, a Job Safety Analysis (JSA) must be completed. Refer to Appendix A as a guide for completing a JSA. **A completed Permit to Work (see Appendix C) must be prepared by each contractor and submitted to the RM EBM or Project Manager for review prior to beginning each task involving working at heights above six feet.**

DEFINITIONS

Fall Prevention - Engineering controls, systems, design elements, construction standards, or equipment intended to provide a safe work platform and to eliminate the risk of falling. Examples of fall prevention are: parapet walls; properly constructed safety guardrail systems; properly constructed scaffolding; edge warning and demarcation systems; and scissor lift with protective railing installed.
Fall Protection - Personal protective gear and systems designed, installed, and worn for the purpose of preventing injury in the event of a fall from heights greater than six feet. An example of fall protection is a full body safety harness with properly sized shock absorbing lanyards attached to properly designed and installed anchor points or static lines.
Fall Arrest System - A system used to arrest (stop) an employee in a fall from a working level. It consists of an anchorage, connectors, a body belt or body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these.
Competent Person – a person capable of identifying existing and predictable hazards in the surroundings or working conditions which are

unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.

INCIDENT REPORTING

All incidents involving personal injury or property damage, or which had the potential to cause significant injury or damage, must be **immediately** reported to BP per the RM Incident Notification Guidance Manual. All information and assistance must be made available upon request to assist with an incident investigation, if necessary.

APPENDIX A – JOB SAFETY ANALYSIS (JSA) – WORKING AT HEIGHTS HAZARD CONTROLS

TASK	HAZARD	CONTROL
Working elevated while others are below	Materials or tools falling onto persons below.	• Place barriers and signage (and spotter, if necessary) below work area to warn others away from the area • Clear area of other workers while handling loose material or tools.
Working below elevated workers	Overhead pipes, cables, or others working overhead.	• Isolation / protection of all services. • Do not work beneath others working overhead. Strict sequence of work agreed with BP area manager
Accessing the elevated work area	Worker falling to ground	• Provide secure ladder access • Provide work platform (aerial lift, scissor lift, scaffolding) • Provide and require use of safety harness and other fall protection equipment.
Routine work process	Worker not following established procedures	• Provide daily briefing on procedures, prior to starting work • Remove worker from task to review why non-compliance.
Working from mobile elevated platform	Over turning of scissor lift / cherry picker	• Only trained personnel to operate. Out-riggers to be fully extended where fitted. Surface must be 'leveled' for operation.
Working near customer access areas	BP Customers walking into work area	• Erect barriers & signs to isolate and warn others from coming into work area. • Provide a "spotter" to ensure no unauthorized entry if necessary. • Schedule work to avoid busy times.

APPENDIX B - PERSONAL PROTECTIVE EQUIPMENT (PPE)

PERSONAL PROTECTIVE EQUIPMENT (PPE)

When a hazardous situation is recognized, steps should be immediately taken to eliminate the hazard either by engineering revision or by changing work methods. If it is not practical to eliminate the hazard, then personal protective equipment (PPE) must be used.

PPE Requirements

1. **High visibility vest:** Always.
2. **Glasses, goggles, or face shield:** Always
3. **Ear plugs or ear muffs:** When working in close proximity to loud noises (jack hammer, vacuum trucks, lawn care)
4. **Hard hat:** Always
5. **Fall protection equipment:** When working at heights above six feet and/or within six feet from an exposed edge
6. **Long pants and long-sleeve work shirt:** During any work at BP facilities
7. **Steel-toe Boots or Shoes (leather):** During any work at BP facilities

APPENDIX C - WORKING AT HEIGHTS - PERMIT TO WORK

WORKING AT HEIGHTS - PERMIT TO WORK	
SITE IDENTITY:	CONTRACTOR:
DATE OF WORK:	PLANNED DURATION of WORK
WORK TO BE COMPLETED: (DESCRIBE TASK TO BE UNDERTAKEN, I.E. REPLACEMENT OF CANOPY LIGHT BULBS; SERVICE TO HVAC ROOF UNIT, ETC.)	

PERSONNEL	
NAME OF SUPERVISOR IF ON-SITE PART TIME, INDICATE VISITING FREQUENCY	NAMES OF OTHER PERSONNEL

SEQUENCE & SAFE METHOD OF WORK (DETAIL THE SEQUENCE OF WORK AND THE SAFE WORKING PROCEDURES TO BE USED. ALSO ANY NEED FOR SPECIALIST SUB-CONTRACTOR METHOD STATEMENT & RISK ASSESSMENT)	YES	NO (n/a)
1. AGREE WITH SITE MANAGER THE EXACT LOCATION OF INTENDED WORK.		
2. Ensure work does not create risk to persons below. Barriers / signage to be erected as required.		
3. Ensure no hazards overhead e.g. power cables, service pipes etc.		
4. Ensure isolation and sequence of work is approved with site manager.		
5. Access ladders are to be: a. Secured at top b. Extends a minimum of four rungs above stepping off point c. Positioned on level, firm base capable of supporting anticipated load d. Positioned at a 1:4 angle. e. Where ladder access is not practical, an approved mechanical means may be used (cherry picker, scissor lift, JLG etc)		
6. Working platforms (scaffolding) provided wherever possible. All must be: a. Minimum of 24 inches wide b. Fitted with double guardrails and toe boards when working above 6 feet. c. Top rail must be min 36 inches above the platform. d. Toe boards are to be min of 6 inches high. e. Secondary guardrail positioned to ensure no unprotected gap between top rail and toe board in excess of 18 inches. f. Type of platform used, erected, operated		
Note – All roofs and cherry pickers / scissor lifts are to be treated as working platforms		
7. Fall Prevention equipment only to be used where working platforms are impractical a. Instruction and training given to personnel in equipment use b. Maintenance and inspection schedule for fall prevention equipment c. Anchorage points must be connected to the structure d. Lanyards fitted with shock absorbers, which limit potential falls to a maximum of six feet e. Emergency rescue procedures		
8. PPE: (list all that is to be used)		

EQUIPMENT (list)	Trained Operator YES	NO or N/A
1. Mobile elevating equipment (scissor lift or aerial lift)		
2. Scaffold platforms erected by competent person		
3. Traffic barriers, cones, flags, snow fencing.		

SPECIAL INSTRUCTIONS & WORK INSTRUCTIONS

AUTHORISATION TO CARRY OUT WORK

I CERTIFY THAT THE ABOVE EQUIPMENT/SITE IS SAFE TO CARRY OUT WORKING AT HEIGHTS BY PERSONS SUBJECT TO THE SPECIFIED REQUIREMENTS

ISSUED BY: ..... PERMIT VALID FROM DATE ...../...../..... .....AM/PM

COUNTERSIGNED: ..... TO DATE ..../...../..... ..... AM/PM

I UNDERSTAND THE NATURE OF THE WORK AND CERTIFY THAT THE ABOVE CONDITIONS WILL BE OBSERVED AT ALL TIMES

RECEIVED BY – CONTRACTOR/EMPLOYEE ..... DATE ...../...../.....

WORK COMPLETED		WORK HAND BACK	
Time	Contractor/Employee	Time	Received by Site Manager
Date	.....	Date	.....

Incident Report Form

Remediation Management	REPORT TITLE	
	INCIDENT REPORT NO	

GENERAL INFORMATION

*(Mark **x** only one)*

Accident *(fill out appropriate accident category)*	
Near Miss/HSSE Opportunity	

ACCIDENT CATEGORY
*(Mark **x** one or more)*

Injury / Illness	
Material Release	
Property Damage/Fire	
Transport accident	
Security	

Incident Date dd/mm/yy		Incident Time	
Org. 1 – Region Org 2. – State/Country Org. 3 - Portfolio			
Primary Company Involved			
Site # or Site Name			
Location of Incident			

WORK PROCESS

Air Transport		Drilling		Office Work		Sea transport	
Catering		Inspection		Oil transport		Storage	
Commissioning		Lifting – Crane operations		Pipe laying		Survey	
Construction		Lifting – Rigging operations		Production/Injection		Wire line / well service	
Demolition		Maintenance		Process shutdown		Other (*Specify*)	
Discharging Products		Material handling		Receipt of shipment/goods			
Diving		Normal Operation		Road transport			

INCIDENT DESCRIPTION, LESSONS LEARNED, COMMENTS

Immediate Action Taken:

[Lessons learned]	

WEATHER CONDITIONS				GROUND CONDITIONS			
Clear/Fair		Sleet		Bituminous based		Muddy	
Foggy		Snow		Concrete		Rocky	
Freezing Temperature		Sunny		Dry		Sandy	
Hail		Thunderstorm		Gravel		Slippery	
Mist		Windy		Icy		Wet	
Overcast		Dark		Inclined		Not relevant	
Rain		Not relevant		Level		Other *(Specify)*	

OUTPUTS (USE EXTRA PAGES FOR MULTIPLE INJURIES)

PERSONAL INJURY ***(underline necessary item)***

Work Related: YES NO **Classification:** Fatality DAFWC Restricted work Medical Treatment First aid No treatment	**First Aid Treatments** 1. Non-prescription medication at non-prescriptive strength 2. Tetanus immunizations 3. Cleaning, flushing or soaking wounds on the surface of the skin 4. Using wound coverings such as bandages, Band-Aids™, gauze pads, est., or using butterfly bandages or Steri-Strips™ 5. Hot or cold therapy 6. Any non-rigid means of support 7. Temporary immobilization devices 8. Drilling of a fingernail or toenail to relieve pressure, or draining fluid from a blister 9. Using eye patches 10. Removing foreign bodies from the eye using only irrigation of a cotton swab 11. Removing splinters or foreign material from areas other that the eye by irrigation, tweezers, cotton swabs or other simple means 12. Using finger guards 13. Using massages 14. Drinking fluids for relief of heat stress	**Nature of injury:** Abrasion; Amputation; Avulsion; Bite; Blister; Blood Borne Pathogen; Burn-Chemical; Burn-Thermal; Carpal Tunnel Syndrome; Chemical Exposure; Concussion; Contusion/Bruise; Death; Dislocation; Dust Disease - lung; Electric Shock; Fracture; Hernia; Impalement; Incision; Irritation; Laceration; Loss of Consciousness (asphyxiation); No apparent Injury; Occupational Skin Disease; Physical Agent Disorder (e.g., heat, cold); Poisoning; Puncture Wound; Respiratory Condition - Toxic Agent; Sprain or Strain; Standard Threshold Shifts (STS); Trauma Disorder (e.g., noise, vibrations); Other (*Specify*)	**Type of contact** Caught Between; Chemical Substances; Cold Substances; Diving Related; Electricity; Eye flash; Fall from Height; Fall from Ladder/Steps; Fire or Explosion; Foreign Body in Eye; Fumes or Gas; Handling Goods or Materials; Lifting/Handling Equipment Failed; Loss of Containment; Machinery; Radiation; Slip or Fall at same level; Struck Against; Struck by; Structural Failure; Transport; Use of Hand Tools; Other (*Specify)*	**Body part injured:** 1. Ankle 2. Arm/Shoulder 3. Back 4. Chest 5. Ear 6. Eye **7. Extensive injuries** 8. **Finger** 9. Foot 10. Hand 11. Head 12. Internal lesions 13. Knee 14. Mouth 15. Skin 16. Throat 17. Tooth 18. Toe 19. Thigh/ leg 20. Wrist 21. Other (specify)

Shift	**Overtime**	**Age**	**Male/ Female**	**Occupation**	**Experience**	**Person Affected**
☐ Normal ☐ Changeover ☐ Extended	**Yes No**					BP / Contractor /

MATERIAL RELEASE Reportable Quantity Exceeded? Y/ N Notifiable Release?: Y / N Uncontrolled Release?: Y / N

Release Type	Material Released	Qty Released	Qty Recovered	Released to
Atmospheric /Leak /Spill / Waste Disposal				Water /Air /Ground /Containment Area

TRANSPORTATION

Type (Car, Truck, Aircraft, Maritime, etc.)	Light / Heavy On / Off	Road / Accident type / Load / Other comments
[Be specific]	Bp /Contractor /	

PROPERTY/EQUIPMENT DAMAGE/ FIRE

Description	Loss in $	Comments

CLC – COMPREHENSIVE LIST OF CAUSES

(View pg. 4 for supplementary material and input the numbers for Immediate and Root Causes)

Critical Factor(s) *(major contributors to the incident which, if eliminated, could prevent the occurrence or reduce the incident's severity):*

√	Possible Immediate Causes	1.1, 1.2, etc DEFINE
	1. Following Procedures	
	2. Use of Tools & Equipment	
	3. Use of Protective Methods	
	4. Inattention/ Lack of Awareness	
	5. Protective Systems	
	6. Tools, Equipment & Vehicles	
	7. Work Exposure to	
	8. Work Place Environment/ Layout	

√	Possible System Root Causes	1.1, 1.2, etc DEFINE
	1. Physical Capability	
	2. Physical Condition	
	3. Mental State	
	4. Mental Stress	
	5. Behavior	
	6. Skill Level	
	7. Training/ Knowledge Transfer	
	8. Management/ Supervision/ Employee Leadership	
	9. Contractor Selection & Oversight	
	10. Engineering/ Design	
	11. Work Planning	
	12. Purchasing, Material Handling & Material Control	
	13. Tools & Equipment	
	14. Work Rules/Policies/Standards/Procedures (PSP)	
	15. Communication	

SEVERITY MATRIX (FOR EXPLANATIONS ROLL OVER THE MATRIX OR REFER TO PG.5)

Actual Loss *(What was actual loss using matrix below?)* Mark all appropriate categories.

Potential Loss *(What might have been worst probable* ***not worst imaginable outcome*** *of this event?)* Mark all appropriate categories

For Potential Loss choose probability of Reoccurrence:
H (high) – chance greater than 1 in 10 of outcome being realized
M (medium) – chance between 10 and 1000 of outcome being realized
L (low) – chance less than 1 in 1000 of outcome being realized (**E.g. potential loss box completed can look like B4 M)**

Severity level	Health			Safety			Environment			Property Damage			Reputation			Business Interruption/ Unit Outage			Security/ Criminal Act		
	A			B			C			D			E			F			G		
1	A1			B1			C1			D1			E1			F1			G1		
2	A2			B2			C2			D2			E2			F2			G2		
3	A3			B3			C3			D3			E3			F3			G3		
4	A4			B4			C4			D4			E4			F4			G4		
5	A5			B5			C5			D5			E5			F5			G5		
	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H	L	M	H

GETTING HSE RIGHT (REFER TO PG.6)

*(mark **X** one)*
A - inadequate requirements/guidelines
B - requirements/guidelines not appropriate
C - requirements/guidelines not complied

A	B	C		Specify (1.1, 1.2 etc)
			1. Leadership and Accountability	
			2. Risk Assessment and Management	
			3. People, Training and Behaviors	
			4. Working with Contractors and Others	
			5. Facilities Design and Construction	
			6. Operations and Maintenance	
			7. Management of Change	
			8. Information and Documentation	
			9. Customers and Products	
			10. Community and Stakeholder Awareness	
			11 Crisis and Emergency Management	
			12 Incident Analysis and Prevention	
			13 Assessment, Assurance and Improvement	

GOLDEN RULES

Does Incident relate to the one of the Golden Rules?
If Yes, mark appropriate Rule(s) NO

	Getting the Basics Right
	Permit to Work
	Energy Isolation
	Ground Disturbance
	Confined Space Entry
	Working at Heights
	Lifting Operations
	Vehicle Safety
	Management of Change (MOC)

Does Incident Relate to Dropped Objects?

Yes	
No	

FOR ACTIONS CHOOSE THE PRIORITY:
1 (High) – needs to be completed in less than 1 week
2 (Medium) – needs to be completed in less than 1 month
3 (Low) – needs to be completed in less than 6 months

ACTIONS TO PREVENT RECCURRENCE

	Action Item	Responsible Party	Action Item Type	Priority (1,2 or 3)	Target Completion Date

Investigation Team:

Investigation:

Findings:

Witness Statement Information (Witness Name, Phone #, Type, Statement)

Management Comments:

Originator		Supervisor for activity		Site/facility manager	
Name		Name		Name	
Job Title		Job Title		Job Title	
Date		Date		Date	

CLC – COMPREHENSIVE LIST OF CAUSES

Immediate Causes

1	Following Procedures	1-1 Violation by individual; 1-2 Violation by group; 1-3 Violation by Supervisor; 1-4 Operation of equipment without authority; 1-5 Improper position/posture for work; 1-6 Overexertion of physical capability; 1-7 Work or motion at improper speed; 1-8 Improper lifting; 1-9 Improper Loading; 1-10 Shortcuts; 1-11 Others
2	Use of Tools & Equipment	2-1 Improper use of equipment; 2-2 Improper use of tools; 2-3 Use of defective equipment (aware); 2-4 Use of defective tools (aware); 2-5 Improper placement of tools, equipment or materials; 2-6 Operation of equipment at improper speed; 2-7 Servicing of equipment in operation; 2-8 Other
3	Use of Protective Methods	3-1 Lack of knowledge of hazards present; 3-2 Personal protective equipment not used; 3-3 Improper use of personal protective equipment; 3-4 Servicing of energized equipment; 3-5 Equipment or materials not secured; 3-6 Disabled guards, warning systems or safety devices; 3-7 Removal of guards, warning systems or safety devices; 3-8 Personal protection equipment not available; 3-9 Others
4	Inattention/Lack of Awareness	4-1 Improper decision making or lack of judgment; 4-2 Distracted by other concerns; 4-3 Inattention for footing and surroundings; 4-4 Horseplay; 4-5 Act of violence; 4-6 Failure to warn; 4-7 Use of drugs or alcohol; 4-8 Routine activity without thought; 4-9 Other
5	Protective Systems	5-1 Inadequate guards or protective devices; 5-2 Defective guards or protective devices; 5-3 Inadequate personal protective equipment; 5-4 Defective personal protective equipment; 5-5 Inadequate warning systems; 5-6 Defective warning systems; 5-7 Inadequate isolation of process or equipment; 5-8 Inadequate safety devices; 5-9 Defective safety devices; 5-10 Other
6	Tools, Equipment & Vehicles	6-1 Defective equipment; 6-2 Inadequate equipment; 6-3 Improperly prepared equipment; 6-4 Defective tools; 6-5 Inadequate tools; 6-6 Improperly prepared tools; 6-7 Defective vehicle; 6-8 Inadequate vehicle for the purpose; 6-9 Improperly prepared vehicle; 6-10 Other
7	Work Exposure to	7-1 Fire or explosion; 7-2 Noise; 7-3 Energized electrical Systems; 7-4 Energized systems, other than electrical; 7-5 Radiation; 7-6 Temperature extremes; 7-7 Hazardous chemicals; 7-8 Mechanical hazards; 7-9 Clutter or debris; 7-10 Storms or acts of nature; 7-11 Slippery floors on walkways; 7-12 Other
8	Work Place Environment/Layout	8-1 Congestion or restricted motion; 8-2 Inadequate or excessive illumination; 8-3 Inadequate ventilation; 8-4 Unprotected height; 8-5 Inadequate wok place layout; 8-6 Other

Back to CLC table

Root Causes

1	Physical Capability	1-1 Vision deficiency; 1-2 Hearing deficiency; 1-3 Other sensory deficiency; 1-4 Reduced respiratory capacity; 1-5 Other permanent physical disabilities; 1-6 Temporary disabilities; 1-7 Inability to sustain body positions; 1-8 Restricted range of body movement; 1-9 Substance sensitivities or allergies; 1-10 Inadequate size or strength; 1-11 Diminished capacity due to medication; 1-12 Other
2	Physical Condition	2-1 Previous Injury or illness; 2-2 Fatigue; 2-3 Diminished performance; 2-4 Blood sugar insufficiency; 2-5 Impairment due to drug or alcohol use; 2-6 Other
3	Mental State	3-1 Poor judgment; 3-2 Memory failure; 3-3 Poor coordination or reaction time; 3-4 Emotional disturbance; 3-5 Fears or phobias; 3-6 Low mechanical aptitude; 3-7 Low learning aptitude; 3-8 Influenced by medication; 3-9 Other
4	Mental Stress	4-1 Preoccupation with problems; 4-2 Frustration; 4-3 Confusing directions/demands; 4-4 Conflicting directions/demands; 4-5 Meaningless or degrading activities; 4-6 Emotional overload; 4-7 Extreme judgment/decision demands; 4-8 Extreme concentration or perception demands; 4-9 extreme boredom; 4-10 Other
5	Behavior	5-1 Improper performance is rewarded; 5-2 Improper Supervisory example; 5-3 Inadequate identification of critical safe behaviors; 5-4 Inadequate reinforcement of critical behaviors; 5-5 Inappropriate of aggression; 5-6 Improper use of production incentives; 5-7 Supervisor implied haste; 5-8 Employee perceived haste; 5-9 Other
6	Skill Level	6-1 Inadequate assessment of required skills; 6-2 Inadequate practice of skills; 6-3 Lack of coaching on skill; 6-4 Insufficient review of instruction to establish skill; 6-5 Other
7	Training/Knowledge Transfer	7-1 Inadequate knowledge transfer; 7-2 Inadequate recall of training materials; 7-3 Inadequate training effort; 7-4 No training provided; 7-5 Other
8	Management/ Supervision/ Employee leadership	8-1 Conflicting roles/responsibilities; 8-2 Inadequate leadership; 8-3 Inadequate correction of prior hazards/incident; 8-4 Inadequate identification of worksite/job hazards; 8-5 Inadequate management of change system; 8-6 Inadequate incident reporting/investigation system; 8-7 Inadequate/lack of safety meetings; 8-8 Inadequate performance measurement and assessment; 8-9 Other
9	Contractor Selection & Oversight	9-1 Lack of contractor pre-qualifications; 9-2 Inadequate contractor pre-qualifications; 9-3 Inadequate contractor selection; 9-4 Use of a non-approved contractor; 9-5 Lack of job oversight; 9-6 Inadequate oversight; 9-7 Other
10	Engineering/Design	10-1 Inadequate technical design; 10-2 Inadequate standards, specifications and/or design criteria; 10-3 Inadequate assessment of potential failure; 10-4 Inadequate ergonomic design; 10-5 Inadequate monitoring and construction; 10-6 Inadequate assessment of operational readiness; 10-7 Inadequate monitoring of initial operation; 10-8 Inadequate evaluation and/or documentation of change; 10-9 Other
11	Work Planning	11-1 Inadequate work planning; 11-2 Inadequate preventive maintenance; 11-3 Inadequate repair; 11-4 Excessive wear & tear; 11-5 Inadequate reference materials and publications; 11-6 Inadequate audit/inspection/monitoring; 11-7 Inadequate job placement; 11-8 Other
12	Purchasing, Material Handling and Material Control	12-1 Incorrect item received; 12-2 Inadequate research on materials/equipment; 12-3 Inadequate mode or route of shopping; 12-4 Improper handling of materials; 12-5 Improper storage of materials or spare parts; 12-6 Inadequate material packaging; 12-7 Material shelf life exceeded; 12-8 Improper identification of hazardous materials; 12-9 Improper salvage and/or waste disposal; 12-10 Inadequate use of safety and health data; 12-11 Other
13	Tools & Equipment	13-1 Inadequate assessment of needs and risks; 13-2 Inadequate human factors/ergonomic considerations; 13-3 Inadequate standards or specifications; 13-4 Inadequate availability; 13-5 Inadequate adjustment/repair/maintenance; 13-6 Inadequate salvage and reclamation; 13-7 Inadequate removal/replacement of unsuitable items; 13-8 No equipment record history; 13-9 Inadequate equipment record history; 13-10 Other
14	Work Rules/ Policies/Standards/ Procedures (PSP)	14-1 Lack of PSP for the task; 14-2 Inadequate development of PSP; 14-3 Inadequate implementation of PSPs, due to deficiencies; 14-4 Inadequate enforcement of PSP; 14-5 Inadequate communication of PSP; 14-6 Other

Back to CLC table

15	Communication	15-1 Inadequate horizontal communication between peers; 15-2 Inadequate vertical communication between supervisor and person; 15-3 Inadequate communication between different organizations; 15-4 Inadequate between work groups; 15-5 Inadequate communication between shifts; 15-6 Inadequate communication methods; 15-7 No communications method available; 15-8 Incorrect instructions; 15-9 Inadequate communication due to job turnover; 15-10 Inadequate communication of safety and health data, regulations or guidelines; 15-11 Standard terminology not used; 15-12 Verification/repeat back techniques not used; 15-13 Messages too long; 15-14 Speech interference; 15-15 Other **Back to CLC table**

SEVERITY MATRIX EXPLANATION

A1	Multiple person on-site with over-exposure to harmful effects with onset of severe or life-threatening irreversible health effects e.g. occupationally induced cancer, kidney damage, asbestosis and mesothelioma, genetic or harm to the unborn. Single persons off-site with over-exposure to harmful effects with onset of severe or life-threatening irreversible health effects e.g. cancer, kidney damage, asbestosis and mesothelioma, genetic or harm to the unborn. Multiple persons off-site with over-exposure to harmful effects with resultant moderate or worse irreversible health effects e. g. asthma, noise induced hearing loss
A2	Multiple persons on-site with over-exposure to harmful effects with resultant moderate irreversible health effects e.g. asthma, occupational noise induced hearing loss. Single person on-site with over-exposure to harmful effects with onset of severe or life-threatening irreversible health effects e.g. cancer, kidney damage, asbestosis and mesothelioma, genetic or harm to the unborn. Single person off-site with over-exposure to harmful effects with resultant moderate irreversible health effects e.g. asthma, occupational noise induced hearing loss. Multiple persons off-site with over-exposure to harmful effects with mild to moderate reversible health effects e. g. irritation, nausea
A3	Multiple persons on-site with over-exposure to harmful effects with reported and confirmed mild to moderate reversible health effects, e.g. irritation, nausea. Single person on-site with over-exposure to harmful effects with resultant moderate irreversible health effects e.g. asthma, occupational noise induced hearing loss. Single person off-site with over-exposure to harmful effects with mild to moderate reversible health effects e. g. irritation, nausea
A4	Potential for on-site over-exposure but no reported ill-health effects. Single person on-site with reported symptoms of mild to moderate reversible health effect, g. irritation, nausea-confirmed by medical authority. Potential for off-site exposure but no effects identified
A5	Single person on-site with over-exposure to harmful effects, but no reported ill-health effect e.g. monitoring result shows occupational exposure limit has been exceeded, or one-off event such as failure of local controls or PPE· No impact off-site or detectable off-site exposure
B1	Multiple fatalities amongst persons on site. Fatality to single person off site. Multiple permanent injuries to person off site
B2	Fatality to single person on site. Multiple permanent injuries amongst persons on site. Permanent injury to single person off site. Multiple non permanent injuries to persons off site
B3	Permanent injury to single person on site. Multiple non-permanent injuries (DAFWC) amongst persons on site. Non permanent injury to single person off site **Back to Matrix**
B4	Single or Multiple minor (recordable) injuries amongst persons on site. Recordable injury (medical treatment) to single person off site
B5	First Aid or less. No impact to persons off site
C1	Large uncontrolled release of hazardous material, e.g. > 10,000 barrels, 1,000 barrels in sensitive area, > 100 Te of classified material Impact for beyond the facility boundary. Long term damage affecting extensive area off site and prolonged clean-up
C2	Uncontained release of reportable quantity, e.g. >100 barrels, 10 Te classified material. Impact on immediate neighborhood beyond facility boundary. Long term damage affecting limited area off site and prolonged clean-up
C3	Uncontained release of minimum reportable quantity. No long-term impact beyond facility boundary. Prolonged damage on site
C4	Release contained site. No prolonged damage
C5	Contained releases of hazardous material. No off site impact. Minor damage/quick clean-up
D1	>$ 5 million. Extensive damage to unit/facility, impact at adjacent unit. Impact offsite (e.g. window breakage)
D2	$ 0,5-5 million. Damage to large proportion. No impact off site
D3	$ 100 k to $ 500 k. Damage to a single major plant item. Widespread damage to minor equipment items, e. g. cabling, instrumentation and small bore pipework
D4	$10 k to $ 100 k. Localized damage to minor equipment items **Back to Matrix**
D5	< $ 10 k Superficial damage
E1	National or international media coverage. Prosecution and heavy fine by regulator. Change of regulations at national level
E2	National media attention. Prosecution of regulator
E3	Regional media coverage. Extended involvement of regulator focusing on issues beyond immediate event
E4	Local media coverage. Increased regulator enforcement at site level e. g. improvement notice. Equipment repair plus testing
E5	Complaints from local neighborhood/community. No formal action by regulator
F1	> $ 5 million > 1 year. Cabling, instrumentation and small bore pipework
F2	$ 0,5-1 million1 month replacement/extensive repair of mayor plant items e.g. vessels, compressors
F3	$ 100 k to $ 500 k> 1 week Replacement/extensive repair of a single major plan item Equipment repair/replacement of extensive testing
F4	< $ 10k to $ 100 k< 1 week Equipment repair plus testing
F5	< $ 10 k< 1 day Repairs can be completed with unit on line
G1	Civil unrest in country requiring evacuation of staff. Bomb attack. Hostage taking/ Kidnap Murder. Serious sabotage
G2	Serious criminal act leading to prosecution. Serious breach of guidelines on handling security information. Major extortion/ bribery/ fraud
G3	Criminal act involving police investigation. Breach of company policies leading to dismissal. Bomb threat. Minor sabotage. Minor extortion/ bribery/ fraud

G4	Breach of company policies leading to formal disciplinary action
G5	Breach of company policies leading to informal warning **Back to Matrix**

THIRTEEN ELEMENTS OF BP'S HSE MANAGEMENT SYSTEM FRAMEWORK

1.	Leadership and Accountability	1.1. Leaders model positive HSE behaviors by personal example both on and off the job, and reinforce and reward positive behaviors. 1.2. Leaders engage in clear, two-way communication with employees, contractors and others on HSE issues. 1.3. Leaders integrate the HSE Expectations into business planning and decision making processes, ensuring that documented systems are in place to deliver these Expectations. 1.4. Leaders establish clear HSE goals and objectives, roles and responsibilities, performance measures and allocate competent resources and, where necessary, specialist expertise. 1.5. HSE Management systems are developed, documented, implemented and supported throughout the organization. These address health, safety, technical integrity, environmental, security, product and operational risks in accordance with the appropriate Expectations. 1.6. Leaders' HSE performance is assessed against their annual objectives, based on feedback from line management, peers and others in the Business Unit. 1.7. Leaders integrate Group HSE targets into their business activities. *(These include, for example, external verifications, climate change, sustainable development, biodiversity, and emissions reductions.)* 1.8. Leaders promote the sharing of HSE lessons learned inside and outside their Business Unit. **Back to gHSEr table**
2.	Risk Assessment and Management	2.1. Leaders put into place and promote the use of processes to identify hazards associated with BP's activities, assess risks, control the hazards and manage the risks to acceptable levels. 2.2. Potential hazards and risks to personnel, facilities, the public, customers and the environment are assessed for existing operations, products, business developments, acquisitions, modifications, new projects, closures, divestments and decommissionings. 2.3. Assessed risks are addressed by levels of management appropriate to the nature and magnitude of the risk. Decisions are clearly documented and resulting actions implemented through local procedures. 2.4. Risks assessments and risk management/control measures are referenced in project approval documentation. 2.5. Risk assessments are updated at specified intervals and as changes are planned.
3.	People, Training and Behaviors	3.1. Employees and contractors practice, encourage, and reinforce safe, healthy and environmentally sound behaviors. 3.2. HSE roles, responsibilities and accountabilities are developed and used to define individual performance targets. These are documented, and feedback on personal performance is provided. 3.3. Recruitment, selection and placement processes ensure that personnel are qualified, competent, and physically and mentally fit for their assigned tasks. 3.4. BP's workforce has the required skills and training to competently perform their tasks in a healthy, safe and environmentally sound manner. Training is evaluated to determine its effectiveness. 3.5. With employees' involvement, physical, chemical, biological, ergonomic and psychological health hazards are identified and the risks managed in the workplace. 3.6. Each worksite has access to an appropriate level of medical support and to resources/facilities that promote health and wellness. 3.7. A programme is in place to ensure that the performance of our workforce and others on our premises is not impaired by drugs and alcohol. 3.8. New or transferred employees, contractors and other visiting personnel undergo appropriate site orientation/induction training which covers HSE rules and emergency procedures. **Back to gHSEr table**
4.	Working with Contractors and Others	4.1. Pre-qualification, selection and retention criteria are established for work performed by contractors, suppliers and others, including a system for assuring their compliance. 4.2. Hazards and risks associated with contractor and procurement activities in our businesses are identified and effectively managed. 4.3. Interfaces between BP and suppliers of services and products are identified and effectively managed. 4.4. Clear deliverables and performance standards are agreed to and systems are put in place to assure HSE and technical compliance. 4.5. Purchased products and services are, where possible, verified as meeting national/international health, safety and environmental standards. 4.6. Joint venture and alliance partners have HSE management systems that are aligned with those of BP, meet legal compliance requirements and satisfy the Group's Expectations and targets.
5.	Facilities Design and Construction	5.1. Baseline technical, environmental and health data are collected before the development of any new operation, facility or major modification. 5.2. Facilities are designed and constructed using technology which balanced commercial risks and financial benefits to manage technical risk and minimize or eliminate emissions, discharges, impacts on biodiversity and other environmental impacts. 5.3. Project management systems and procedures addressing technical integrity and HSE accountabilities are documented and well understood. Design, procurement and construction standards are formally approved by the designated technical / engineering authority. Formal design review, verification and validation studies are carried out based on risk assessment. 5.4. Operational, maintenance and HSE expertise are integrated early in the project / design stage. Experience from previous projects and current operations are applied. 5.5. Potential hazards are identified and HSE risks assessed using appropriate risk assessment tools (e.g. quantified risk assessments, HAZOPS, and HSE reviews) at specific stages of a project from concept through to start-up, and risks are mitigated through risk management techniques. 5.6. Deviations from design standards are identified and managed at an appropriate level, with the reasons documented and retained 5.7. Local regulatory requirements are met or exceeded. Where these are absent or inadequate, standards are set that protect people and the environment. 5.8. Quality assurance and inspection systems are in place to ensure that facilities meet design and procurement specifications and that construction is in accordance with approved standards. 5.9. Documented pre-startup reviews are carried out for all newly installed or modified equipment to confirm that construction is in accordance with design, all required verification testing is complete and acceptable, and all recommendations / deviations are closed and approved by the designated technical authority. **Back to gHSEr table**
6.	Operations and Maintenance	6.1. Post-startup reviews are carried out for all newly installed or modified equipment to confirm that construction is in accordance with design, all required verification testing is complete and acceptable, and all recommendations / deviations are closed and approved by the designated technical authority. 6.2. Applicable regulatory requirements are met or exceeded and operational / technical / mechanical integrity is maintained by use of clearly defined and documented operational, maintenance, inspection and corrosion control systems. 6.3. Key operating parameters are established and regularly monitored. The workforce understands their roles and responsibilities to maintain operations within these parameters. 6.4. Clearly defined startup, operating, maintenance and shutdown procedures are in place with designated authorities identified (e.g. permit to work, hand-over, equipment and process isolation, etc.). 6.5. Equipment that has been out of service for maintenance or modification is subject to documented inspection and testing prior to use. 6.6. Reliability and availability of protective systems are maintained by appropriate testing and maintenance programmes, including management of temporary disarming or deactivation. 6.7. Risks introduced by simultaneous operations are assessed and managed. 6.8. HSE impacts associated with waste, emissions, noise, and energy use are monitored, and minimized.

		6.9. Comprehensive waste management programmes are in place to ensure that wastes are minimized, re-used, recycled, or properly disposed of. 6.10. Decommissioning, remediation and restoration plans are established using risk-based studies for end of life equipment / facilities. 6.11. A quality assurance programme exists to ensure that equipment replacement or modification maintains operations integrity.
7.	Management of Change	7.1. The health, safety, security, environmental, technical and other impacts of temporary and permanent changes are formally assessed, managed, documented and approved. 7.2. Changes in legal and regulatory requirements, technical codes, and knowledge of health and environmental effects, are tracked and appropriate changes implemented. 7.3. Effects of change on the workforce / organization, including training requirements, are assessed and managed. 7.4. The impact on product quality of changes in manufacturing processes is assessed, associated hazards are evaluated and risks are controlled. 7.5. The original scope and duration of temporary changes are not exceeded without review and approval. Back to gHSEr table
8.	Information and Documentation	8.1. A system is in place to securely manage drawings, design data and other documentation, including definition of responsibilities for maintaining this information. 8.2. Applicable regulations, permits, codes, standards and practices are identified. The resultant operating requirements are documented and communicated to the workforce. 8.3. Pertinent records are maintained, available and retained as necessary. Obsolete documentation is identified and removed from circulation. 8.4. Scope and format of technical documentation will be agreed for each facility and will form part of the design input for new facilities and modifications. 8.5. Employee health, medical and occupational exposure records are maintained with appropriate confidentiality and retained as necessary. Back to gHSEr table
9.	Customers and Products	9.1. Assessments are conducted for new products prior to marketing or distribution, to identify health, safety and environmental hazards and risks associated with normal use and foreseeable misuse. 9.2. Periodic reassessments are conducted for all manufactured and re-branded products and intermediate streams. This includes a review of adverse effects reported or experienced by those handling these products. 9.3. New uses or markets for existing products are evaluated to ensure that health, safety and environmental hazards and risks are identified and addressed. 9.4. Records of assessment, background information and conclusions are kept up-to-date throughout the product's life and retained as necessary. 9.5. Up to date information on health, safety and environmental hazards and risks relating to the use, storage, handling, transport and disposal of our products is available to the workforce, customers and others. Material Safety Data Sheets (MSDS), labels and other information are developed and issued to handlers and users in accordance with legislative and customer requirements, and as information changes. 9.6. A system exists to collect and review adverse effects reported or experienced by those handling our products. Causes for concern are identified and actions are taken. 9.7. An effective recall system exists for products where a defect could give rise to health, safety or environmental hazards. 9.8. A system is in place to respond on a 24-hour basis to emergency requests for product health, safety and environmental information.
10.	Community and Stakeholder Awareness	10.1. Open and proactive communications are established and maintained with employees, contractors, regulatory agencies, public organizations and communities regarding the HSE aspects of our business. 10.2. BP Amoco recognizes and responds to government and community HSE related Expectations and concerns about our operations and our products. 10.3. HSE impacts of new business development on local communities are openly assessed, communicated, and integrated into the business case. 10.4. HSE impacts of any divestment or decommissioning on existing operations, neighbors or local community (originally identified during the new business development stage) are reviewed, communicated and managed. 10.5. Major business operations periodically issue an externally verified statement relating to HSE performance and programmes.
11.	Crisis and Emergency Management	11.1. Emergency management plans are based on the risks that potentially impact the business. These plans are documented, accessible, clearly communicated and align to the BP Amoco Group's emergency management system. 11.2. Equipment, facilities and personnel needed for emergency response are identified, tested and available. 11.3. Personnel are trained and understand emergency plans, their roles and responsibilities, and the use of crisis management tools and resources. 11.4. Drills and exercises are conducted to assess and improve emergency response / crisis management capabilities, including liaison with and involvement of external organizations. 11.5. Periodic updates of plans and training are used to incorporate lessons learned from previous incidents and exercises. Back to gHSEr table
12.	Incidents Analysis and Prevention	12.1. All health, safety, technical integrity, security and environmental incidents, including near misses, are openly reported, investigated, analyzed and documented. 12.2. Major incidents are investigated by a multi-function / level team with participation and leadership from outside the Business Unit. 12.3. Incident investigations, including identification of root causes and preventive actions, are documented and closed-out. 12.4. Information gathered from incident investigations is analyzed to identify and monitor trends and develop prevention programmes. 12.5. Lessons learned from investigations are shared across BP Amoco and personnel take appropriate action upon receipt of such information. 12.6. Mutual sharing of lessons learned and good practice is encouraged within the wider energy and chemical industry.
13.	Assessment, Assurance and Improvement	13.1. HSE performance indicators (both inputs and outcomes) are established, communicated and understood throughout the organization. 13.2. The workforce is actively involved in periodic self-assessments of the effectiveness of processes and procedures to meet the HSE Expectations. 13.3. HSE performance indicators are regularly used to determine when and what management system changes are necessary. When changes occur in one HSE Element the impact on the entire management system is evaluated. 13.4. A system exists to continually improve HSE behaviors through observation, recording and coaching. 13.5. A documented, risk-based audit programme exists to periodically evaluate progress towards HSE targets, regulatory compliance, and the effectiveness of the Business Unit management system(s). 13.6. The Business Unit, in co-operation with the audit team, plans audits which are objective and systematic. These are documented and conducted using expertise from inside and outside the unit. 13.7. Findings from learning processes (e.g. audits, incident investigation, near misses, HAZOPS, etc.) are prioritized, tracked and used to systematically improve the HSE management system. 13.8. The Business Unit leadership team reviews the management system to ensure it is continually delivering consistent, desired performance. Based on the review, new risk-based targets are considered and established wherever necessary. 13.9. Business Units report HSE performance data, as part of the Group's HSE Reporting Requirements. 13.10. A process is in place whereby assurance is regularly provided to the Chief Executive Officer demonstrating effective implementation of the BP Amoco HSE Commitment and Expectations. Annual self-assessments against these Expectations are carried out by each Business Unit, along with external audits at least every three years. Back to gHSEr table

Injury and Illness Reporting – General Guidelines

General Recording Criteria

Death
Days away from work
Restricted work
Transfer to another job
Medical treatment beyond first aid
Loss of consciousness
A significant injury or illness diagnosed by a physician or other licensed health professional:

- Cancer
- Chronic irreversible disease
- Fractured or cracked bone
- Punctured eardrum

Needlestick Injuries – if penetration of the skin AND that object was contaminated with another person's blood or other potentially infectious material

Hearing loss – if hearing test shows 10 dBA shift from the current baseline, AND total cumulative hearing loss must be 25 dBA or more above audiometric zero.

First Aid Treatments

1. Non-prescription medication in non-prescription strength
2. Tetanus immunizations
3. Cleaning, soaking, flushing wounds on surface of skin
4. Use of bandaids, steri-strips or butterfly bandages
5. Hot or cold therapy
6. Non-rigid means of support
7. Temporary immobilization devices while transporting an accident victim
8. Drilling finger or toenail
9. Eye patch
10. Removing foreign bodies from eye using irrigation or cotton swab
11. Removing splinters or other foreign material from places other than the eye by simple means
12. Using finger guards
13. Massage Treatments
14. Drinking fluids for relief of heat stress

Medical Treatment

The definition for medical treatment is, "the management and care of a patient to combat disease or disorder".

Medical treatment does not include visits to a physician or other licensed health care professional solely for observation or counseling. It also does not include the conduct of diagnostic procedures, such as x-rays and blood tests, including the administration of prescription medications used solely for diagnostic purposes. Medical treatment is anything beyond the 14 first aid treatments.

Medical Treatment Examples:
Prescription medication (includes prescription eye drops)
Sutures and staples are considered medical treatment
Physical therapy and chiropractic treatment are considered medical treatment.
Receiving oxygen is treatment
Fracture

Counting Days Away From Work, Job Transfer, or Restricted Work
You do not count the day of the injury; the count begins with the following day. You do not count the day the employee returns to work. You would count each of the calendar days the employee would not be able to work, the count includes weekends and holidays etc.

Traction Reporting Classification and Guidance
BP GEM Refining Portfolio

This write-up provides guidance for the classification of incidents, near misses, and health, safety, and environmental (HSE) opportunities for entry into the BP Traction database system to ensure consistency in the type and content of reports being entered into the database. Each project should assign an individual and alternate (such as the project manager or HSE contact) who is familiar with this guidance, and responsible for determining the classification of any HSE report and whether or not the report is appropriate for entry into the Traction database.

Non-Major Incident [(1)]

- *Definition*: Any event resulting in occupational injury or illness (requiring treatment beyond first aid), vehicle incident ($0 cost threshold), spill or release (> 1 bbl), regulatory notices of fine or violation, unplanned business interruption, fire/explosion, threat to security, and/or property damage greater than $500.

- *Criteria for entry into Traction database*. All incidents will be reported in Traction including:
    - Any vehicle incident
    - Spills <100 bbl
    - Any notice of fine or NOV
    - Any injury or illness resulting in DAFWC or OSHA recordable
    - Property damage > $500

Near Miss

- *Definition*: A significant unsafe condition, unsafe action, and/or breach in HSE protocol/policies/procedures that, under slightly different circumstances, would have resulted in an injury, occupational illness, property damage, vehicle incident environmental spill or release, or fire/explosion.

- *Criteria for entry into Traction database*: All near misses will be reported in Traction including:
    - Any vehicle incident without damage or injury
    - Any potential for spill or release
    - Any injury including first aid which does not result in medical treatment
    - Any risk of fire or explosion
    - Any property damage <$500.

(1) – For more information regarding BP GEM incident definitions including major/high potential incidents, refer to: GEM Incident & Near Miss Notification and Reporting Guidance Manual (Revision 4, 12/22/00).

HSE Opportunity

- *Definition*: An observation or realization that action can be taken to enhance the HSE conditions or standards under which we work.

- *Criteria for entry into Traction database*: HSE opportunities include observations of positive actions and ideas for improvement as well as minor unsafe conditions/actions that, under circumstances of moderate to low likelihood, could result in a near miss or minor incident.

  HSE opportunities will always be shared within the project team from which they are reported. These opportunities will be entered into the Traction database and shared beyond the project team if they meet the following criteria:
    - Minor deficiencies or limitations on equipment common to GEM remediation projects that, through redesign or recall, could improve HSE performance.
    - Identification, elimination, and/or modification of "at risk" work practices commonly implemented throughout GEM, or that pertain to HSE areas of emphasis identified by GEM (e.g., hand safety or road safety).
    - Substantive best practices from which a broad array of GEM projects could benefit, including:
        - Information on innovative technologies or new equipment that could streamline or improve work
        - Work processes or administrative tools that could simplify or increase the effectiveness of HSE policies and systems.

Remediation Management
Incident & Near Miss Notification and Reporting Guidance Manual

Attachment B – BST Manual

(Revision 10 – March 3, 2005)

TABLE OF CONTENTS

Contents

Appendices

Templates/Tools

BP's Commitment to Health, Safety and Environmental Performance (HSE)

Everybody who works for BP, anywhere, is responsible for getting HSE right. Good HSE performance and the health, safety and security of everyone who works for us are critical to the success of our business.

Our goals are simply stated – no accidents, no harm to people, and no damage to the environment.

We will continue to drive down the environmental and health impact of our operations by reducing waste, emissions and discharges, and using energy efficiently. We will produce quality products that can be used safely by our customers.

We will:

- consult, listen and respond openly to our customers, employees, neighbours, public interest groups and those who work with us
- work with others – our partners, suppliers, competitors and regulators – to raise the standards of our industry
- openly report our performance, good and bad
- recognize those who contribute to improved HSE performance

Our business plans include measurable HSE targets. We are all committed to meeting them.

Lord Browne
Group Chief Executive

HSE Policy
January 1999

Section 1: Overview and Expectations

Remediation Management (RM) is committed to distinctive Health, Safety, and Environmental (HSSE) performance through a comprehensive management system - getting HSE right (gHSEr). A key component of this system is Element 12: Incidents Analysis and Prevention which describes the expectations for reporting, investigation and analysis of incidents and near misses to prevent recurrence and improve performance.

BP Incident Notification & Reporting Expectations
This guidance document describes the RM incident and near miss internal notifications and reporting procedures to be followed and provides guidance to RM regions for the implementation of practices and tools to meet the expectations as prescribed in gHSEr Element 12. External notification and reporting procedures, e.g. regulatory, are specific to the regions and the locations of the sites and are not addressed in this document. Emergency response notifications and actions are addressed in Element 11, Crisis and Emergency Management guidance.

Incident and near miss reporting requirements apply to all RM activities at closed and divested sites to include those performed by contractors and subcontractors. It is the responsibility of the RM regions to develop and communicate specific additional instructions for incident notification and reporting. Procedures for incident and near miss investigation (Root Cause Analysis) and the prioritization of corrective and preventive actions are incorporated by reference in this document.

RM at Operating Sites
For RM regions that have employees and contractors working at BP operating sites, it is the responsibility of the site and regional management (Regional Manager, EBMs, and HSSE Coordinators) to discuss and implement the incident and near miss notification requirements and procedures for RM and for that respective BP operating site with all RM employees and contractors. All efforts should be coordinated with the Operating Site HSSE Contact and RM. Operating sites should:

1. First and foremost, meet the expectations of RM and the BP operating facility HSSE team, and
2. In lieu of any expectations from the BP operating facility, implement your own requirements with guidance from RM's existing operating procedures to improve your HSSE performance.

Major and High Potential Incidents
Major and High Potential Incidents are subject to BP Group reporting requirements (Key HSSE Process 5 & Key HSSE Process 6 in the gHSEr Guide for BP Managers). Instructions for Major and High Potential incidents have been developed by RM and are included in this document (see Appendix B and C).

Tr@ction System
Tr@ction is the standard framework and data management tool to record and track HSSE incidents and near misses for RM. All incidents and near miss/HSSE opportunities are to be reported in RM's Tr@ction system. Reports must be accurately completed and be used as the primary tool for incident analysis and prevention. For RM regions with operations at BP operating facilities/sites, it is important to work with the respective BP operating facility HSSE contact to identify the requirements and process for entering incident and near miss data into the operating facility Tr@ction system if required.

It is expected that incident/near miss analysis, prevention programs, and lessons learned sharing are the responsibility of all RM HSSE teams. Lessons learned sharing is critical to incident prevention. The practice for sharing learnings within and among the RM regions has started and should continue through on-going communications of incident reports and analysis as they may occur.

Section 2: RM Key HSSE Reporting Definitions and Guidance

Data requirements differ slightly by Business Stream, but data definitions are common across BP. Reporting of injuries and illness requires good understanding of how to differentiate between:

- Whether or not it is work-related, and
- Whether it is a recordable injury or a first aid treatment

Definitions for parameters reported monthly and other key indicators are included in this key process.

The following definitions and criteria provide guidance for the classification of incidents, near misses, and health, safety, and environmental (HSSE) opportunities for entry into the RM Tr@ction system to ensure consistency in the type and content of reports being entered into the database.

Each project should assign an individual and alternate (such as the project manager or HSSE Coordinator) who is familiar with this guidance, and responsible for determining the classification of any HSSE report and whether or not the report is appropriate for entry into the Tr@ction database.

A summary of incident notifications is provided in Appendix D. Additional HSSE Reporting definitions can be found in Appendix F.

Major Incident

Definition: An incident, including a security incident, involving any one of the following:

1. A fatality associated with BP operations
2. Multiple serious injuries
3. Significant adverse reaction from authorities, media, NGO's, or the general public
4. Cost of accidental damage exceeding US $500,000
5. Oil spill of more than 100 barrels, or less if at a sensitive location (1 barrel = 42 US gallons)
6. Release of more than ten tons of a classified chemical

High Potential Incident

Definition: An incident or near miss, including a security incident, where the **most serious probable outcome** is a Major Incident.

The purpose of High Potential incident reporting is to encourage learning from serious incidents. If, after investigation, an incident is found to fit these definitions, it should be reported, even if it is outside the nominated reporting timeframe, or does not explicitly meet these definitions.

Non-Major Incident

Definition: Any event resulting in any occupational injury or illness (excluding first aid), vehicle incident ($0 cost threshold), any spill or release, regulatory notices of fine or violation, unplanned business interruption, fire/explosion, threat to security, and/or property damage greater than $500.

***Criteria for entry into Traction database*.** All incidents will be reported in Tr@ction including:

- Any vehicle incident (zero threshold for damage)
- Spills <100 bbl
- Any notice of fine or NOV
- Any injury or illness
- Property damage > $500 (exception for vehicle incident)

First Aid Case

Definition: A work related injury that requires one time treatment and subsequent observations (for example, scratches, burns, cuts, splinters which do not ordinarily require medical care or prescription medication) and does not result in a DAFW or RI case. Such treatment and observation are considered first aid even if provided by a physician or registered medical professional at their facility. **However, if a physician prescribes a prescription drug, then the injury becomes a RI case.**

Criteria for entry into Tr@ction database: First aid incidents should be filled out as an "Injury" report in Tr@ction. When prompted, users should select "first Aid" as the Injury classification in the injury report.

Near Miss/HSSE Opportunity/HSSE Best Practice

Near Miss

***Definition*:** A significant unsafe condition, unsafe action, and/or breach in HSSE protocol, policies or procedures that, under slightly different circumstances, would have resulted in an injury, occupational illness, property damage, vehicle incident, environmental spill or release, or fire/explosion.

***Criteria for entry into Tr@ction database*:** All near misses will be reported in Tr@ction including (but not exclusively):

- Any potential for spill or release
- Any risk of fire or explosion
- Any potential for an injury or illness

Note: It is at the discretion of the EBM or Regional Manager whether to enter a Near Miss that is NOT at a RM site or involves RM employees or contractors.

HSSE Opportunity

Definition: An observation or realization that action can be taken to enhance the HSSE conditions or standards under which we work.

***Criteria for entry into Tr@ction database*:** HSSE opportunities include observations of positive actions and ideas for improvement as well as minor unsafe conditions/actions that, under circumstances of moderate to low likelihood, could result in a near miss or minor incident. HSSE Opportunities should be entered into Tr@ction as a Near Miss/HSSE Opportunity.

HSSE opportunities will always be shared within the project team from which they are reported. These opportunities will be entered into the Tr@ction database and shared beyond the project team if they meet the following criteria:

- Minor deficiencies or limitations on equipment common to RM remediation projects that, through redesign or recall, could improve HSSE performance.
- Identification, elimination, and/or modification of "at risk" work practices commonly implemented throughout RM, or that pertain to HSSE areas of emphasis identified by RM (e.g., hand safety or road safety).
- Substantive best practices from which a broad array of RM projects could benefit, including:
  - Information on innovative technologies or new equipment that could streamline or improve work
  - Work processes or administrative tools that could simplify or increase the effectiveness of HSSE policies and systems.

HSSE Best Practice

Definition: An observation of a positive process, practice or behavior that warrants sharing of Best Practices.

Criteria for entry into Tr@ction: HSSE Best Practices should be entered into Tr@ction as a Near Miss/HSSE Opportunity.

Vehicle Incidents

Definition: All motor vehicles – includes heavy vehicles (3.5 tonnes and heavier), light vehicles (under 3.5 tonnes), self-propelled mobile plant. This includes accidents when using a hire/rental vehicle on company business, or when using a private vehicle on company business for which a member of the workforce is reimbursed.

- Workforce – all employees and contractor personnel (including sub-contractors).
- Work-related mileage – the number of miles driven during work-related activities. This includes all work-related miles driven in hire/rental vehicles, or private vehicles (see 'All motor vehicles' definition above). This does not include commute miles driven between a place of residence and a work site. When traveling on business, the hotel is considered your residence.
- Motor vehicle accident – an accident involving a motor vehicle resulting in injury, or loss/damage, or harm to the environment, whether this impacts BP and/or its contractor directly, or impacts a third party. This is irrespective of whether the accident was preventable or non-preventable. It excludes all accidents where:
  - the BP workforce vehicle was legally parked
  - the journey is to or from the driver's normal place of work
  - minor wear and tear is the case (e.g., stone damage to a windscreen, minor paintwork damage)
  - an incident is the result of vandalism or theft
  - a company provided vehicle is being driven on non-work related activities (e.g., private business, leisure)

Criteria for entry into Tr@ction: Vehicle Accidents should be entered as Transportation accidents with the classification of either "Road" or "Third Party Transport."

Material Releases

Definition: Incident involving RM employee or contractor where products or materials are released from their primary containment in an uncontrolled unplanned fashion. Material releases include those of "impacted" ground water of unknown release material concentrations.

- **Spill** - Loss of primary containment from a BP or contractor operation, irrespective of any secondary containment or recovery. When discovered, leakage from vessels is included in spill reporting, but may be reported separately. Details of spills less than 1 barrel need not be reported, but should be recorded in Tr@ction.
  Major Spill - > 100 barrels of oil, fuel, other hydrocarbon or condensate escapes primary containments or less in a sensitive area. These reports also include a release of 10 tons of classified chemicals or >1 barrel of classified chemical with a high potential.
  Minor Spill - < 100 barrels escapes primary containments.

- **Leak**- loss of primary containment, has or may have an environmental impact, requires immediate action to repair release.

- **Waste Disposal** - No worldwide definition of waste disposal. Refer to local regulations.

- **Atmospheric Release** - loss of primary containment with release directly to air, requires immediate action to repair release of a material as a gas (rather than vaporized from a liquid). If you hold a gas liquefied under refrigeration, report the release as a liquid spill.

Criteria for entering Tr@ction: All material releases should be entered into Tr@ction with one of the four Material Release Types: Spill, Leak, Waste Disposal, and Atmospheric Release. Oil spills require the following fields to be filled in:

IR Type: Material Release
Release Type: Spill or Leak
Secondary Containment Breached: Yes
Material Type: Fuel, oil/other hydrocarbon or condensate
Spill Volume: >1 barrel and <100
Quantity Released: barrels/gallons
Release to: Containment area, ground sub surface, ground surface etc.
Reportable Quantity Exceeded: Yes

NOTE: All oil spills should be reported as a material release with one of these material release types: spill or leak.

Unplanned Releases

***Definition*:** Release of any amount (volume) in a Spill, Leak, or Atmospheric Release involving chemicals, fuel, oil/other hydrocarbon, or condensate (hydrocarbon), where a **REGULATORY BODY was notified**.

Criteria for entry into Tr@ction: Unplanned releases are entered into Tr@ction under the incident type Material Release. The type of release is a Spill, Leak, or Atmospheric release (regardless of amount) and the agency notified has to be indicated in the Incident Report (General Information 3 Screen).

Notice of Violations & other Regulatory Events

Definition: Material releases or other events (e.g. non compliance with consent order requirement) resulting in a Notice of Violation, fine or requiring regulatory notification.

Criteria for entry into Tr@ction: In addition to populating sections relating to the event, additional information is required to be entered under the incident type Compliance/Conformance. You will then need to choose Environmental Event. Please make sure you indicate in the Short Description field if this event is an NOV, NOV with fine, Consent Order, etc. Also, indicate in the Event Description the amount of the fine, if any, that was incurred.

Occupational Injury vs. Illness?

The potential outcome of any 'insult' to the body, for example the consequences of a fall or exposure to a hazardous agent, is an adverse health effect. These are differentiated as either an injury or illness/disease for analysis of causal factors. In a working environment, this is determined by the nature of the original event or exposure, which caused the effect rather than the resulting condition of the affected employee.

Injury

Injuries are caused by instantaneous identifiable events in the working environment. Illnesses are caused by anything other than identifiable instantaneous events e.g. - if repeated or prolonged exposure is involved the outcome is considered an illness. Additionally, a judgment needs to be made as to whether this exposure was work-related. Differentiation is not always straightforward and clear definitions are necessary. Some conditions could be classified as either an injury or an illness but not both. For example:

- Hearing loss resulting from an explosion (an instantaneous event) is classified as an injury, whereas if it results from exposure to noise over a period of time it is classified as an illness.
- Contact with a hot surface or caustic chemical causing an instantaneous burn is an injury.
- Sunburn, frostbite and welding flash burns are normally classified as illnesses because they usually result from prolonged or repeated exposure.
- Tendonitis resulting from a one-time blow to the tendons of the hand is considered an injury, whereas repeated trauma or repetitive movement resulting in the same condition is considered an illness.
- Back cases should be classified as injuries because they are usually triggered by an instantaneous event. Classifying back cases as injuries is appropriate not only for cases resulting from identifiable events, but also for cases where the specific event cannot be pinpointed, since back cases are usually triggered by some specific movement (such as a slip, trip, fall, sharp twist, etc.). Such generalizations are necessary to keep record keeping determinations as simple and equitable as possible.

Illness

Unlike injuries, illnesses may not be easily recognized and evaluation by trained medical personnel is desirable for confirmation both of diagnosis and attribution to occupational or non-occupational causation in accordance with the OSHA Guidelines. Once a work-related illness is diagnosed, managers are responsible for ensuring that they are reported.

Illnesses frequently involve factors such as multiple causation, historic exposures totally unrelated to the current working environment and may also not result in time away from work or require modified job duties. They may also recur or result in a chronic condition. Occupational illnesses are therefore reported only once - at the time of diagnosis or recognition. As a consequence, the calculation of meaningful severity or frequencies is more complicated than for injuries.

Section 3: Incident/Near Miss Notification and Reporting Procedures

Notification of Major Incidents and High Potential Incidents (see Incident Notification Reporting Matrix on page 13)

- Whenever a Major Incident or High Potential Incident occurs, RM management (Head of Function, Chief Operating Officer/VP Operations, HSSE Manager, Regional Manager), and operating facilities management (if applicable),must be notified as specified in *HSSE Process 5: Major and High Potential Incident Reporting Requirements* (see Appendix B) and the *RM Incident Notification and Reporting Process Table* (see Appendix E). Reporting RM staff/contractors should also prepare an initial Incident Announcement and forward to the appropriate parties.
- RM management (Head of Function or designee) immediately notifies BP Group Senior Management that a Major Incident or High Potential Incident has occurred and ensures the completion of the initial Major Incident Announcement or a High Potential Incident Announcement form (see Templates for forms).
- The BP Notification Centers in each global region are a resource for communications as well as emergency response. If needed, the Centers can be called for notification support on Major Incidents when BP personnel are not immediately available and when an incident has occurred where the severity is unknown or additional support may be needed

Notification of Non-Major Incidents, Injuries, and Near Misses

- All Non-Major Incidents, Injuries and Near Misses are reported only within RM or as specified in the RM *Incident Notification and Reporting Process Table* (see Appendix E).

Reporting Major Incidents, Non-Major Incidents, and Near Misses/HSSE Opportunity/HSSE Best Practice

- Incidents are classified intro three basic types – Major (including High Potential Incidents and High Potential Near Misses), Non-Major, and Near Miss as defined in Section 2.
- When an incident occurs, RM employees/contractors must prepare the appropriate report in Tr@ction. When a Major or High Potential Incident occurs, staff and contractors should use both the required Incident Announcement form, as referenced in *Key HSSE Process 5: Major and High Potential Incidents Reporting Requirements* (see Appendix B), and the RM Tr@ction System**.** The Incident Announcement is not required for a Non Major Incident or Near Miss/HSSE Opportunity/HSSE Best Practice.
- The guidelines for submitting initial reports are defined in the Incident Notification & Reporting Matrix located on Page 13.
- Injuries should be reported to the appropriate RM HSSE Coordinator as soon as possible (regardless of the injury classification)

The following steps outline the incident reporting process/procedure to be followed. These steps correspond with the RM Tr@ction Reporting Flowchart below.

An incident occurs…

Step 1: The employee/contractor determines the type of incident and assesses the severity based on the *RM Incident Notification and Reporting Definitions Table* (see Appendix D) and the *Actual Severity Matrix* (located in the Tr@ction System). The initial evaluation determines the appropriate notification process and appropriate Tr@ction forms to use to report the incident.

Step 2: Once the severity is assessed, the employee/contractor must notify, verbally or via email, the appropriate contacts (e.g., EBM or Project Manager, HSSE Coordinator, HSSE Manager, Head of Function, Chief Operating Officer/VP Operations, BP Group Senior Managers) as specified in the *RM Incident Notification and Reporting Process Table* (see Appendix E). In the case of a Major or High Potential incident, RM Management then sends the appropriate Incident Announcement. External notification and reporting procedures (e.g. regulatory) are specific to the region and the locations of the sites.

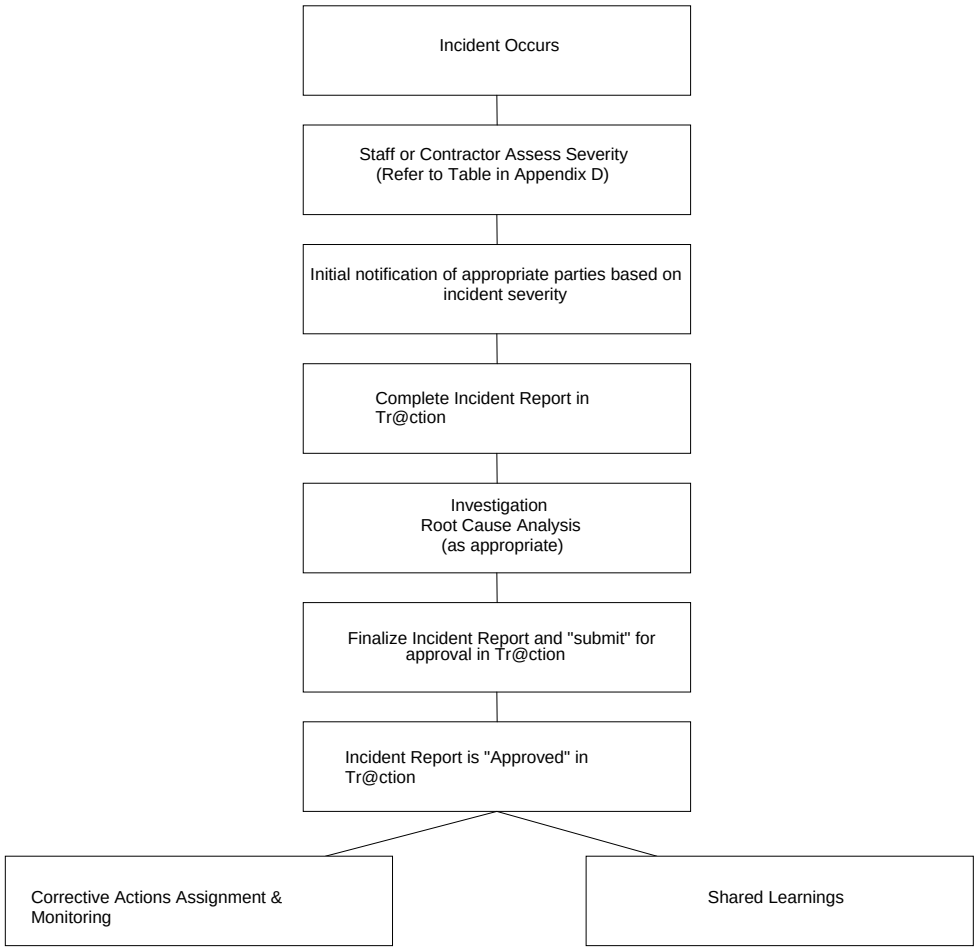
Step 3: The employee/contractor completes the applicable incident report in Tr@ction. If there are only specific people who enter reports into Tr@ction, the employee/contractor works with those designated individuals to record the incident. This is an initial report based on preliminary information, but should assume worst case consequences. The report can be modified with receipt of more accurate detail. However, the report status is still pending approval by the appropriate Tr@ction Approver.

Step 4: An incident investigation and root cause should be carried out for all major incidents (injury or damage), and any minor incident or Near Miss with a high potential of being a major incident, or any incident that results in a Recordable Injury. Refer to the *Key HSSE Process 6: Incident Investigation Guidelines* (see Appendix C) for detailed instruction.

Step 5: Upon completion of an incident investigation and determination of a root cause, the initial Tr@ction report must be finalized and submitted for approval. Once approval is obtained, corrective action(s) are identified, assigned, distributed and monitored through completion. (Note: This is meant to be used for guidance – all Traction reports for the previous month must be approved by the 10th of the following month)
Refer to *Section 5: Corrective and Preventive Action Reporting & Tracking, the Action Prioritization Instructions* (see Appendix G), and the *RM Nonconformance and Corrective and Preventive Action Reporting and Tracking Procedure* (located on the gHSEr web site in the view By Topics under the topic Non Conformances) for detailed guidance on identifying, prioritizing, assigning and tracking corrective and preventive actions through completion.

Step 6: The completed incident report is approved.

RM TR@CTION REPORTING FLOWCHART



NOTE: In Tr@ction, approvers for RM are set-up in the system by the RM LTSA. External notification and reporting procedures (e.g. regulatory) are specific to regions and the locations of the sites. Additional notification of incidents to RM Management occurs because individuals establish In-Box Rules (preferences) in Tr@ction that alert those when specific incidents occur. For additional guidance on establishing In-Box Rules, please refer to the RM Tr@ction User Manual located on the gHSEr web site.

The following matrix illustrates the different paths taken based on incident severity. More detailed information, including investigation and corrective action reporting requirements can be found in the *RM Incident Notification and Reporting Process Table* (see Appendix E).

INCIDENT NOTIFICATION AND REPORTING MATRIX

	NOTIFICATION			REPORTING		
Incident Severity	Notification required	Accountability By	When	Forms / Reports	Accountability By	When
MAJOR / HIGH POTENTIAL Refer to BP Group Major Incident and High Potential Incident Reporting Guideline	Head of Function Chief Operating Officer/VP Operations HSSE Manager Regional Manager EBM/HSSE Coordinator Operating Facility Contact (if applicable) Core Distribution (see Key Process 5) BP Notification Center (as needed)	RM Employee or PM	Immediately (within 1 hour)	Major Incident Announcement Form OSHA 300 Log (as applicable) Tr@ction Report (See Appendix E)	Regional Manager	Within 24 Hours
DAFW CASE	Head of Function * Chief Operating Officer/VP Operations* HSSE Manager Regional Manager EBM/HSSE Coordinator Operating Facility Contact (if applicable) BP Notification Center (as needed)	RM Employee or PM	Immediately (within 1 hour)	Tr@ction Report OSHA 300 Log – as applicable	Regional Manager	Within 24 Hours
INJURY **(Recordables)**	See notification list above for Non-Major	RM Employee or PM	Immediately (within 1 hour)	Incident Report in Tr@ction OSHA 300 Log – as applicable	Regional Manager	Within 24 Hours
FIRST AID	EBM/HSSE Coordinator Operating Facility Contact (if applicable)	RM Employee or PM	Immediately (within 1 hour)	Tr@ction Report OSHA 300 Log – as applicable	Regional Manager	Within 72 Hours
NEAR MISS/ HSSE Opportunities	EBM/HSSE Coordinator Operating Facility Contact (if applicable)	RM Employee or PM	Report	Tr@ction Report	Regional Manager	Within 72 Hours

NOTE: If EBM or PM is not available, contractor is responsible for notifying the next applicable level.
* For OSHA Recordables, DAFW Cases, or otherwise determined.
In cases of Contractor incidents requiring OSHA 300 Logs, the employer of the contractor is responsible for filling out the form (regardless of work for RM/BP).

Section 4: Investigation & Root Cause Analysis

All types of incidents should be investigated, although the method, persons responsible, and deadlines vary depending on the severity of the incident. The EBM works with relevant parties to decide what level of investigation and root cause analysis is to be performed. The procedures are outlined in the following table:

	INVESTIGATION PROCEDURES			
Incident Severity	**Forms / Reports**	**Accountability By**	**When**	**Distribution**
MAJOR / HIGH POTENTIAL Refer to BP Group Major Incident and High Potential Incident Reporting Guideline	MIA/HIPO Report Tr@ction Incident Report updated with investigation results RCA based on the Comprehensive List of Causes (CLC) Methodology	Regional Manager Regional Manager Investigation Team Leader from RM LT as agreed with the Head of Function	10 Days (Preliminary) 30 Days (Final)	Refer to Appendix B & C
DAFW CASE	Tr@ction Incident Report RCA based on the Comprehensive List of Causes (CLC) Methodology	EBM or Regional Manager (as appropriate) Investigation Team Leader from RM LT as agreed with the Head of Function	10 Days (Preliminary) 30 Days (Final)	LT XLT PMs HSSE Manager
INJURY **(Recordables)**	Tr@ction Incident Report RCA using CLC for all recordable injuries	EBM or Regional Manager as appropriate Maybe led by RM LT member if serious injury otherwise led by Regional Manager	10 Days (Preliminary) 30 Days (Final)	LT XLT PMs HSSE Manager
FIRST AID	Tr@ction Incident Report	EBM or HSSE Coordinator	Within 72 Hours	Via Tr@ction
NEAR MISS/HSSE OPPORTUNITY	Tr@ction Incident Report (Incident Type: Near Miss/HSSE Opportunity)*	EBM or Regional Manager (as appropriate) or HSSE Coordinator	At the discretion of the EBM, PM or HSSE Coordinator	Via Tr@ction

***** *At discretion of EBM, Regional Manager or HSSE Coordinator*

Major Incidents require a Tr@ction Incident Report in the system within 24 hours, updated with investigation results within 10 days and a final report with any investigations within 30 days. Non-Major Incidents and Near Miss/HSSE Opportunities normally require completed RM Incident Reports in Tr@ction within 24 hours and a completed report with relevant investigations (if necessary) within 14 days.

The reports require such information as general information, comprehensive list of causes/root cause contributing factors, a thorough root cause analysis, witness statements, and a corrective action plan. Detailed investigations should be carried out for all serious or major incidents (injury or damage) and any minor accident or Near Miss with a high potential of being a major one (see Procedure for Major Incident Investigations located in the getting HSR right Guide for BP Manager). Less serious incidents should be investigated with a degree of rigor appropriate to the potential for loss or injury. In addition, they must indicate which gHSEr Expectations were failed by the occurrence.

The Root Cause Analysis procedure is described in the *BP Comprehensive List of Causes: A Tool for Root Cause Analysis.* This tool can be used to assist with the identification of root causes and potential preventive actions. Additional Root Cause Analysis training material is available from the RM HSSE Manager. Discretion should be used in deciding whether formal investigations including Root Cause Analysis should be done in the case of Near Miss Reports.

Section 5: Corrective and Preventive Action Reporting & Tracking

All incidents and near misses are investigated to determine the root cause of the nonconformance, and a corrective and/or preventive action is generated to mitigate any impacts caused by the nonconformance and to correct and/or prevent their recurrence. The Root Cause Analysis reviews all processes, work operations, concessions, environmental records, service reports and other documentation.

The corrective and preventive actions taken shall be appropriate to the magnitude and frequency of problems experienced and commensurate with the health, safety, and environmental impacts experienced. Corrective actions are actions that will be taken to fix the problem. Preventive actions address the root causes of the problem to prevent recurrence. These action items are prioritized, assigned to responsible person(s), tracked through completion, and verified as successfully completed.

Corrective and preventive actions are tracked until closure. Tr@ction will be the tool that regions and sites use to document and track corrective and preventive actions. Once the work has been completed, an approved reviewer will verify the results in an appropriate manner and then sign off on the incident. The level of accountability varies with the severity of the incident.

Effective corrective and preventive action tracking involves the following activities:

(1) Identifying Action Items
(2) Prioritizing Action Items
(3) Reviewing and Approving Action Items
(4) Entering Action Items into Tr@ction
(5) Tracking Action Items to Closure and Verified Completed Actions
(6) Monitoring the Corrective and Preventive Action Tracking Process

Instructions for the prioritization of action items can be found in Appendix G. This document provides detailed instructions on how to prioritize the corrective and preventive actions resulting from incident reports. There is also a flowchart representing the action prioritization process.

RM has created metrics to measure performance in relation to action items. Action items should be appropriately designated and all **HIGH priority** action items should be addressed and completed promptly.

Section 6: Analysis and Prevention

Shared Learnings

Incident reports contain valuable information that may help reduce the risks of similar types of incidents in the future. The Tr@ction system emphasizes expanding shared learnings.

Inbox Rules

The Rules feature of the Traction Inbox allows a user to set rules for messages to be distributed on a regular basis. This feature allows users to be notified when incidents occur that meet conditions established in the rule. Inbox Rules can also be established to assist in the distribution of lessons learned and best practices. Additional information on setting, editing and deleting is located in the Traction Welcome Page under Traction Support Materials – user manuals.

During the initial phase, investigation reports of all Major and Non-Major incidents will be reviewed by appropriate RM management representative(s) whose roles are defined in the Investigation Procedures Matrix (page 14). Individuals should set-up their In-Box rules accordingly. Review of near miss investigations will be left to the discretion of the regions (HSSE Coordinator and/or Regional Manager).

Data Aggregation and Analyses

The RM HSSE Manager will compile Incident and Near Miss data quarterly, as a minimum, for review and trend analysis by the HSSE Coordinators from the RM regions.

APPENDICES

A. RM Regional Notification Form Template

B. gHSEr HSSE Process 5: Major Incident and High Potential Incident Reporting

C. gHSEr HSSE Process 6: Incident Investigation Guidelines

D. Incident Notification and Reporting Definitions Table

E. Incident Notification and Reporting Process Table

F. HSSE Reporting Definitions and Guidance

Appendix A
RM Regional Notification Form

Head of Function

Name

Office phone

Cell phone

Home phone

Chief Operating Officer/VP Operations

Name

Office phone

Cell phone

Home phone

HSSE Manager

Name

Office phone

Cell phone

Home phone

Regional Manager

Name

Office phone

Cell phone

Home phone

HSSE Coordinator

Name

Office phone

Cell phone

Home phone

Incident Notification Center

Name

Phone

RM Regional Notification Form Continued

Env. Bus. Manager / Project Manager

Name

Office phone

Cell phone

Home phone

Contractor / HSSE Point of Contact

Name

Office phone

Company

Cell phone

Home phone

Contractor / HSSE Point of Contact

Name

Office phone

Company

Cell phone

Home phone

Contractor / HSSE Point of Contact

Name

Office phone

Company

Cell phone

Home phone

Contractor / HSSE Point of Contact

Name

Office phone

Company

Cell phone

Home phone

Appendix B

gHSEr HSSE Process 5: Major and High Potential Incident Reporting Requirements

The purpose of this document is to discuss notification and the reporting requirements for major and/or high potential incidents involving RM employees, consultants and contractors conducting field work at sites managed by RM. RM manages environmental assessments and remediation projects for orphan sites, operating sites, and divested operating sites. All incidents related to RM activities are required to be reported to RM management, operating facilities management (if applicable), and the BP Notification Center.

What is a Major or High Potential Incident?

A **major incident** is an incident, including a security incident, involving any one of the following:

- A fatality associated with BP operations
- Multiple serious injuries
- Significant adverse reaction from authorities, media, NGO's, or the general public
- Cost of accidental damage loss exceeding US $500,000
- Oil spill of more than 100 barrels, or less if at a sensitive location (1 barrel = 42 US gallons)
- Release of more that ten tons of a classified chemical

A **high potential incident** is an incident or near miss, including a security incident, where the **most serious <u>probable</u> outcome** is a Major Incident.

The purpose of High Potential incident reporting is to encourage learning from serious incidents. If, after investigation, an incident is found to fit these definitions, it should be reported, even if it is outside the nominated reporting time frame, or does not explicitly meet these definitions.

Reporting Major and High Potential Incidents

The reporting structure and requirements for Major and High potential Incidents is a formalized process. RM senior management reporting for a Major and High Potential Incident requires the following:

- BP Major Incident Announcement is initiated as soon as possible, but reported within 24 hours by the Head of Function (or designee) and is provided to a predetermined list of employees or contractors established by the Head of Function.
- For fatalities, in addition to the BP Major Incident Announcement, the Head of Function (or designee) must also provide the appropriate management (GVP) with a verbal report immediately. Criminal fatalities are exempt from this additional verbal reporting requirement. However, for RM, criminal fatalities are not exempt from this additional verbal reporting requirement.
- An investigation team is formed within 24 hours. This includes outside team leader and staff for the team along with written instructions in any case involving a fatality.
- Fact-Finding Update within 10 days. This summary describes the basic facts and preliminary recommendations.
- Final Reports are due within 30 days. This report describes the basic causes, final recommendations and action to be taken.

The BP Major Incident Announcement notification process is currently accomplished via e-mail with the words **MAJOR INCIDENT ANNOUNCEMENT** or **HIGH POTENTIAL INCIDENT ANNOUNCEMENT** in the e-mail subject area per the attached RM Incident Reporting flowchart. Copies of the form can be found in the Templates section of this manual and should accompany the e-mail where applicable. The distribution list for Major Incident Announcement (MIA) is also attached and should ONLY be used for Major Incident Reporting. This list can be found in addition to reiterations of these procedures at the following website:

http://hse.bpweb.bp.com

The attached RM Tr@ction Reporting flow chart (Section 3) outlines the reporting requirements for RM. The notifications should be made immediately (within one hour). Reports should include basic facts about the incident, actions being taken, agencies and BP personnel notified, and any requests for assistance.

The BP Notification Centers are available to help notify management and obtain assistance. Operators will report incidents to the Crisis Support Centers, which maintain a list of RM management and available resources in the region. Incidents at sites within operating facilities should also be reported to the operating facility. If the current owner of a divested site does not have the ability to manage and respond to an incident, caused by RMs remediation activities, RM may want to take an active role.

Preplanning for Field Work

Reporting requirements and definitions should be discussed with facility contacts, consultants and contractors prior to the start of field programs to ensure that the RM project manager will be notified in a timely manner. This also allows the facility contact to provide RM with names and contacts of management they might want to have RM notify. In addition, all employees, contractors and subcontractors should carry on their person - the Incident Field Card (Template included).

SPECIAL NOTE ON SECURITY INCIDENTS:

Security incidents, such as overt attack against a location or aircraft, siege with BP hostages, bomb attack, etc. that is public knowledge should be reported as above.

In the event of kidnapping, extortion, product contamination threat or covert attack against a BP employee or facility, or any similar incident that may not be in the public domain, the Head of Function or HSSE Manager should communicate immediately with the Group Chief Financial Officer or the Rota Executive Vice President privately, and if possible, securely.

A Major Incident Announcement Report should be completed for every Major and or High Potential incident and distributed to the Head of Function, Chief Operating Officer/VP Operations, HSSE Manager, Regional Manager, Core Distribution, and Operating Facility Contact, per the attached RM Incident Reporting flow chart, immediately as referenced above. These representatives will distribute to the list of MIA representatives as appropriate.

MAJOR Core Distribution List for RM

- Group Chief Executive
- Executive Vice Presidents
- Group Vice President – Government and Public Affairs
- Vice President and Head of Group Press Relations
- Group Vice President – HSSE
- Vice President – Group Security

HIGH POTENTIAL Core Distribution List for RM

- Business Stream Group Vice President
- Group Vice President – HSSE
- Vice President – Group Security

Appendix C

gHSEr HSSE Process 6: Incident Investigation Guidelines

It is essential to discover the root causes of incidents, so that:

- Effective preventive actions can be decided and implemented locally
- 'Lessons Learned' can be identified, implemented and shared with other operations which have similar risks
- Trends can be uncovered through valid statistical analysis

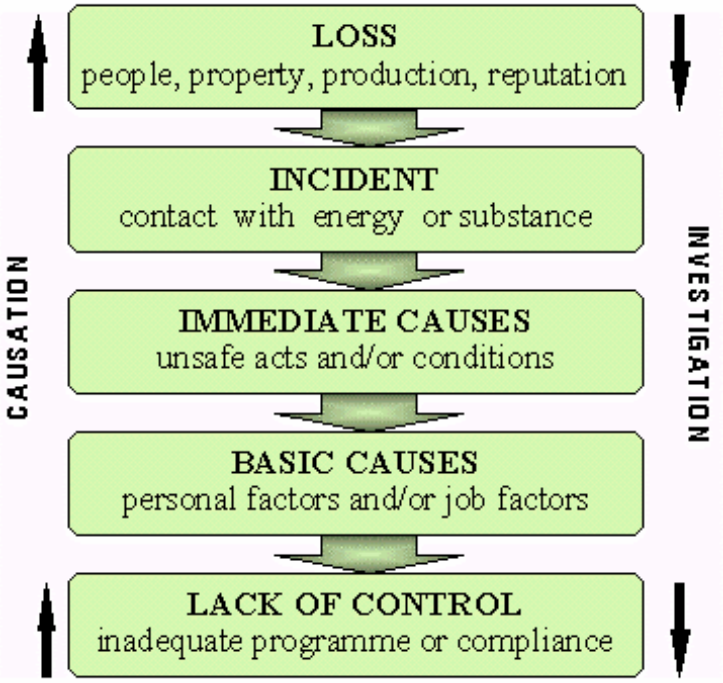
Detailed investigations should be carried out for all major incidents *(injury or damage)* and any minor incident or Near Miss with a high potential of being a major one. Less serious incidents should be investigated with a degree of rigor appropriate to the potential for loss or injury. The principles employed are nonetheless the same.

It is very unusual for an incident to have one single cause. Normally incidents result from a chain or combination of actions or errors, some going quite far back in time. This is why it is essential to have a systematic and thorough investigation, following a consistent methodology, so that the chain of causes can be tracked right back to its origins.

Investigation Procedure

All BP operations should have a detailed procedure to assist in this process, which takes the investigation back through the chain of events that eventually resulted in the incident.

At each stage it is important to determine why these occurred and in which areas management control was deficient.



The linkages are tracked at each stage by asking the question 'why' to establish the factors that allowed the condition to occur.
At each stage there is seldom a single cause, and the investigator must search thoroughly to ensure that none are missed.

Procedure for Major Incident Investigations*

Following a major incident, an investigation should be initiated immediately by the Business Unit Manager along the following lines:

Step 1 - Appoint and fully brief team members, including appropriate technical experts, and a chairman with sufficient seniority and independence from the involved operation to reflect the seriousness of the incident.

Step 2 - Issue terms of reference. These define the scope of the investigation and should include tracking the causation chain as well as other related factors, e.g. performance of emergency response and external services. Consider at what point legal advice may be required.

Step 3 - Specify timing of the report. It may be appropriate to issue an interim report within a few days of the incident to provide a factual account of events and some immediate recommendations for corrective action. It may also be necessary to alter the composition of the investigating team at this point if some particular expertise is found to be needed.

Step 4 - Issue the final report, which will be fully detailed with in-depth technical analysis and a fully considered set of short and long-term recommendations. Ideally the report should be issued within 14 days.

Once the report is available, RM management should review the findings and recommendations and agree on their course of action. The final report should contain management responses to all recommendations with clear delegation of responsibilities for action. A timescale for review or completion is essential.

The Head of Function will decide on the distribution of the full report, in particular which findings and 'lessons learned' are to be shared with others both inside and possibly outside BP.

* For incidents involving occupational fatalities, the Group Fatal Accident Investigation process will be activated.

Appendix D
Incident Notification and Reporting Definitions Table

Incident Category	Transportation	Material Release	Environmental Event	Loss of Damage		Security	Injury/Illness	Complaints
Incident Severity	Road/Third Party Transport (i.e. - Vehicle Incidents)	Material Release	(I.e. Agency Action or OTHER Event)	Unplanned Business Interruption	Equip/Prop/Fire / Explosion	Security (i.e. theft, assault, fraud)	Personal Injury / Illness	Public/3rd Party
MAJOR / HIGH POTENTIAL Refer to BP Group Major Incident and High Potential Incident Reporting Guideline (Appendix B)	Any incident resulting in a fatality or multiple serious injuries	Any spill or release > 100 barrels or less in a sensitive area, RQ, off site impact, any spill on navigable water, release of 10 tons of classified Chemical material, or any spill > 1 barrel and has a High Potential	SIGNIFICANT Adverse reaction from authorities	Any accidental damage having a cost exceeding US $500,000	Any fire or explosion with offsite or significant onsite impact / any use of fire fighting equipment – High Potential Property Damage >$500,000	Any serious threats to security, bomb threats, or kidnapping threats – High Potential	Any injuries or illnesses resulting in fatalities or multiple serious injuries	SIGNIFICANT Adverse reaction from media, NGO's or the general public
NON-MAJOR INCIDENTS	Any incident involving a BP vehicle including under the influence of D&A ($0 Cost Threshold) Any contractor incident involving light or heavy vehicles	Any spill < 100 barrel	Any notice of fine, NOV, consent order, citations, penalties, or regulatory audits	Any unplanned business interruption including hitting underground utilities, product lines, or claim, impact on operating facility business.	Any other fire / explosion not categorized as a Major Incident Property Damage of $500 - $499,000)	Any non-serious, threat to security including vandalism.	Any injury or illness resulting in a DAFWC, BP exposure, OSHA Recordable or First Aid	Any incident that causes adverse reaction from the public, or received significant media attention
NEAR MISS / UNSAFE CONDITION or Behavior and/or doesn't meet the definitions of a Major or Non-Major Incident	Any contractor light or heavy vehicle or incident without injury or property damage Any potential incident involving BP employee/ contractor vehicle (i.e., actual accident did NOT occur)	Any potential for spill or release	Any adverse reaction from authorities	Any complaint filed by an Operating Facility Business	Any risk of fire or explosion (i.e. working in LEL conditions, etc.) Property Damage less than <$500 (Does not include vehicle Damage for accidents involving BP employees)	N/A	Any potential for an injury/illness.	N/A

Appendix E
INCIDENT NOTIFICATION AND REPORTING PROCESS TABLE

	NOTIFICATION			INITIAL REPORTING			INVESTIGATION				CORRECTIVE ACTION		
Incident Severity	Notification required	Accountability By **	When	Forms / Reports	Accountability By **	When	Forms / Reports	Accountability By **	**When**	Distribution To	Forms / Reports	Accountability By **	Distribution To
MAJOR/ **HIGH POTENTIAL** Refer to BP Group Major Incident and High Potential Incident Reporting Guideline	Head of Function Chief Operating Officer/VP Operations HSSE Manager Regional Manager EBM/HSSE Coordinator Operating Facility Contact (if applicable) BP Notification Center (as needed)	RM Employee or PM	Immediately (within 1 hour)	Major Incident Announcement Forms OSHA 300 Log (as applicable) Tr@ction Report (See Appendix E)	Regional Manager	Within 24 Hours	MIA/HIPO Report Tr@ction Incident Report updated with investigation results RCA based on the Comprehensive List of Causes (CLC) Methodology	Regional Manager Investigation Team Leader from RM LT as agreed with the Head of Function See Section 4	10 Days (Preliminary) 30 Days (Final)	Refer to Appendix B & C	Incident Report in Tr@ction Lessons Learned document	Regional Manager	Refer to Appendix B & C
DAFW CASE	Head of Function* Chief Operating Officer/VP Operations HSSE Manager Regional Manager EBM/HSSE Coordinator Operating Facility Contact (if applicable) BP Notification Center (as needed)	RM Employee or PM	Immediately (within 1 hour)	Incident Report in Tr@ction OSHA 300 Log – as applicable	Regional Manager	Within 24 Hours	Tr@ction Incident Report RCA based on the Comprehensive List of Causes (CLC) Methodology	EBM or Regional Manager (as appropriate) Investigation Team Leader from RM LT as agreed with the Head of Function RCA Investigations for DAFWCs will be led by member of RMLT	10 Days (Preliminary) 30 Days (Final)	LT XLT PMs HSSE Manager	Incident Report in Tr@ction Lessons Learned document	Regional Manager	LT XLT PMs HSSE Manager
INJURY (Recordables)	See notification list above for Non-Major	RM Employee or PM	Immediately (within 1 hour)	Incident Report in Tr@ction OSHA 300 Log – as applicable	Regional Manager	Within 24 Hours	Tr@ction Incident Report RCA using CLC for all recordable injuries	EBM or Regional Manager as appropriate Maybe led by RM LT member if serious injury	10 Days (Preliminary) 30 Days (Final)	LT XLT PMs HSSE Manager	Incident Report in Tr@ction Lessons Learned document.	Regional Manager	LT XLT PMs HSSE Manager
FIRST AID	EBM/HSSE Coordinator Operating Facility Contact (if applicable)	RM Employee or PM	Immediately (within 1 hour)	Incident Report in Tr@ction	Regional Manager	Within 72 Hours	Incident Report in Tr@ction	EBM/HSSE Coordinator	Within 72 Hours	Via Tr@ction	Incident Report in Tr@ction	As appropriate	As appropriate

Appendix E

INCIDENT NOTIFICATION AND REPORTING PROCESS TABLE

	NOTIFICATION			INITIAL REPORTING			INVESTIGATION				CORRECTIVE ACTION		
Incident Severity	Notification required	Accountability By **	When	Forms / Reports	Accountability By **	When	Forms / Reports	Accountability By **	**When**	Distribution To	Forms / Reports	Accountability By **	Distribution To
NEAR MISS/HSSE OPPORTUNITY	EBM/HSSE Coordinator Operating Facility Contact (if applicable)	RM Employee or PM	Report	Incident Report in Tr@ction	Regional Manager	Within 72 Hours	Incident Report in Tr@ction (Incident Type: Near Miss/HSSE Opportunity)	EBM/Regional Manager or next level of authority (as appropriate) or HSSE Coordinator	At the discretion of the EBM, PM or HSSE Coordinator	Via Tr@ction	Incident Report in Tr@ction	Regional Manager	Via Tr@ction

NOTE: If EBM or PM is not available, Contractor is responsible for notifying the next applicable level.

* For OSHA Recordables, DAFW Cases, or otherwise determined.

** Accountable for circulating to distribution list and ensuring details are entered into Tr@ction.

(A) At Discretion of Regional Manager / HSSE Coordinator

(B) Contractor's Employer regardless of work being done for RM/BP fills out OSHA 300 Logs.

Appendix F

Additional HSSE Reporting Definitions

Additional HSSE Reporting Definitions

BP's injury and illness definitions are the US Occupational Safety and Health Administration (OSHA) definitions as found in the document *'Record Keeping for Occupational Injuries and Illnesses*' ("Blue Book") and in subsequent interpretation from OSHA. The definitions in the following table are based on the OSHA definitions.

Detailed definitions supporting the calculation of environmental data are set out in the BP document entitled '*Environmental Performance - Group Reporting Guidelines'*.

The definitions associated with these key processes are used to ensure international comparability of data for internal BP reporting. Using the definitions may lead to differences between BP reports and locally reported HSSE performance data using other guidelines, often required by legislation.

These definitions have been modified or enhanced to meet the intent of the RM

Reporting Unit	The name of Business Unit or Regional Services Unit or Site, which is reporting data. *For RM the reporting unit is the RM Function.*
Business or Business Stream	Upstream, Downstream, Petrochemicals or Gas, Power and Renewables, Functions, Regions.
Employee	A person directly employed by a BP company.
Contractor	A contractor is any non-BP person who is on BP premises under contract, for business purposes or anyone providing materials, personnel, or services that directly benefit BP and relate to a contract or subcontract. The contract may be with BP or another contractor who is working on behalf of BP. **For group injury and illness reporting purposes, the following "contractors" are <u>excluded except in the event of a fatal accident when any contractor fatality must be reported</u>:** · persons delivering goods, products or materials at a BP site. · someone engaged in the delivery of products by road in execution of a contract with a BP company that runs for less than one year (i.e. short term or spot contractors). · a crew member of a vessel on short term or spot charter to a BP company (i.e. not on time charter). · retail service station dealers and their staff at Company Owned Dealer Operated (CODO) sites. · crew of a non-BP tanker loading or discharging crude oil or product for its own account at a marine terminal. These exclusions do **NOT** apply for the notification of fatalities. · Injuries to workers in third party fabrication yards or toll-manufacturing sites will not be recorded at BP Group level. However, Business Unit and/or Project management should monitor them, and significant events reported through the Major Incident Announcement system.
Third Party	Any person who is not an employee or contractor of BP as defined above

BP Premises	A site operated by a BP company or a marine vessel owned or operated by a BP company *(including all sites of activities involving contractors)*
BP Company	A company wholly owned by the BP Group, or a company or joint venture where BP has equity and is responsible for HSSE. Normally this is where BP is considered to be the operator, (e.g. where BP has a management or technical service agreement)
Establishing a 'work relationship'	The work relationship is established when the injury or illness results from an event or exposure in the work environment. The work environment primarily consists of: • the employer's premises, and • other locations where employees are engaged in work-related activities or are present as a condition of their employment. When an employee is on the employer's premises (generally excluding parking lots) the work relationship is presumed; when off the premises the relationship must be established. • travel on Company business should be considered work-related. • a hotel or motel while being used on company business should be considered a "home away from home" and evaluated as such. • travel between home and work is not work-related. • Injuries or illnesses that occur to employees or contractors while participating in voluntary activities (i.e. those that are provided or made possible by BP but in which participation is voluntary and for personal benefit, such as use of a fitness center) shall not be included in the BP Group internal reporting. However, local recording, follow-up etc. is essential, as is compliance with all legal requirements.
Determining if a case is Reportable	For a case to be 'reportable', there is a four-part test. If all four answers are 'YES", then the case is reportable; if any one or more of the answers is 'NO', the case is not reportable. 1. Did the person experience an injury or an illness? 2. Is the injury or illness work related, in whole or in any part? 3. Is the injury or illness a new case, as opposed to the continuation of an existing injury or illness? 4. Does the injury or illness meet one or more of the severity thresholds for reporting?
Severity Threshold	An injury or illness is considered serious enough to report if it meets one or more of the severity thresholds listed in either the general reporting criteria or the specific reporting criteria. The general reporting criteria requires a case be reported it if involves: • Death • One or more days away from work • Restriction of work or motion • Job transfers • Medical treatment beyond first-aid • A significant injury or illness for which there is no treatment provided, or a • Chronic, irreversible disease for which there is no treatment The specific reporting criteria requires a case be reported if it involves: • A needle stick injury with a contaminated needle • A medical removal under a governmental standard • Hearing loss • Musculoskeletal disorders • Tuberculosis, or • Privacy concern case

Severity Level of Cases	Cases will be reported in one of three severity levels – fatality, days away from work, or other reportable cases. Any work-related death of an employee or contractor must be reported as a fatality, irrespective of when the death occurs. In cases of illness, the death may be years after the event or exposure. Note that all fatalities associated with BP operations, whether reportable or not, are deemed 'notifiable' and must be communicated within 24 hours through the Major Incident Announcement process. Any work-related injury or illness that causes an employee or contractor to be unfit to perform any work duties on a day subsequent to the date of injury or illness must be reported as a days away from work case. Other reportable cases are all other work-related injuries or illnesses that meet the severity threshold but do not involve death or days away from work.
Recordable Fatality (number)	An employee or contractor fatality is deemed recordable if the incident is found to be work-related or related to the wider activities of BP. Fatalities arising, for example, from suicide, inexplicable personal behavior or natural causes would normally be excluded. ***All*** *fatalities associated with BP, whether recordable or not, are reported within 24 hours through the Major Incident Announcement procedure.* ****RM requires fatalities be reported immediately***
Days Away From Work Case (DAFWC) (number)	A work-related injury or illness that causes the injured person to be away from work on any day after the injury or illness, irrespective of whether there was scheduled work. When a physician or other licensed health care professional recommends that the worker stay at home but the employee comes to work anyway. All DAFW Cases should be reported by the reporting unit at which they occurred.
Recordable Injury/Illness (RI) Case (number)	RI cases are all work-related deaths and illnesses, together with injuries that result in loss of consciousness, restriction of work or motion, transfer to another job, or require treatment beyond first aid.
Recordable Injury/Illness Frequency (RIF)	RIF is expressed as the number of recordable injuries and illnesses per 200,000 hours worked.
First Aid Cases	A work-related injury or illness that does not meet any of the severity thresholds necessary to make it a reportable case. Such cases can only be treated using one or more of the fourteen specific first aid treatments to be first aid. Use of any other treatments not listed must be considered medical treatment and thus severe enough to be reportable.
Hours Worked (number)	Total hours worked within a reporting unit, including office staff, part-time employees, apprentices and trainees and personnel from other BP sites or centers working within the unit for more than one month. *For RM*, *Hours Worked includes contractor and subcontractor Hours Worked on BP projects, both in the field and in the office.* *Where a person is using Company property as a temporary home (e.g. on the Alaskan North Slope and offshore platforms) 12 hours should be taken as the working day. For ship operations at sea, a 24-hour working day should be taken.*
Occupational Illness and Industrial Disease (number)	An abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to environmental factors associated with employment. It includes acute and chronic illnesses or diseases, which may be caused by inhalation, absorption, ingestion or direct contact. Chronic conditions should be reported once, in the period during which the condition was first diagnosed. *See note at the end of this Key Process to differentiate between illness and injury*

Road Accidents (number)	• Accidents involving all motor vehicles – including heavy vehicles (3.5 tonnes and heavier), light vehicles (under 3.5 tonnes), self-propelled mobile plant. This includes accidents when using a hire/rental vehicle on company business, or when using a private vehicle on company business for which a member of the workforce is reimbursed. • Workforce – all employees and contractor personnel (including sub-contractors). • Work-related mileage – the number of miles driven during work-related activities. This includes all work-related miles driven in hire/rental vehicles, or private vehicles. • Motor vehicle accident – an accident involving a motor vehicle resulting in injury, or loss/damage, or harm to the environment, whether this impacts BP and/or its contractor directly, or impacts a third party. This is irrespective of whether the accident was preventable or non-preventable. It excludes all accidents where: ▪ The BP workforce vehicle was legally parked ▪ The journey is to or from the driver's normal place of work ▪ Minor wear and tear is the case (e.g., stone damage to a windscreen, minor paintwork damage) ▪ An incident is the result of vandalism or theft ▪ A company provided vehicle is being driven on non-work related activities (e.g., private business, leisure)
Distance Driven	Total work related kilometers traveled by BP operated or contractor vehicles, whether empty or laden, should be reported. These may be estimated where appropriate.
Road Accident Rate	The number of road accidents per million vehicle kilometers traveled
Spills	A spill is defined as a loss of primary containment from a BP or contractor operation, irrespective of any secondary containment or recovery. When discovered, leakage from vessels is included in spill reporting, but may be reported separately. Details of spills less than 1 barrel need not be reported, but should be held locally. ***All spills or materials are required to be reported to RM regardless of volume.***
Total Volume of Oil Spilled (liters)	The volume in liters of oil escaping primary containment, for spills equal to or greater than 1 barrel. * 1 barrel = 159 liters = 42 US gallons **** All spills or materials are required to be reported to RM regardless of volume**.*
Total Oil Spilled and Unrecovered (liters)	The volume in liters of spilled oil, for spills equal to or greater than 1 barrel, that remains in the 'environment' i.e. the ground, water, atmosphere or food chain. **** All spills or materials are required to be reported to RM regardless of volume**.*
Oil Spills to Land or Water	If an oil spill reaches surface water (fresh, salt or brackish) it is defined as a spill to water, otherwise it is a spill to land. Spills to snow or ice should be categorized according to their proximity to a shoreline - offshore is classified as "to water" and on-shore as "to land".
Spills which reach the environment	An oil spill greater than 1 barrel, where there is no secondary containment, or where any liquid breaches or leaks from secondary containment, to come into contact with the ground, snow, ice or water.*

Chemical Releases (number)	The number of chemical releases that are reportable to local agencies under local regulations for BP Chemicals operations. *For RM chemical releases exceeding state reportable quantities will be reported.*
Loss of Containment (number)	Any unplanned event where gaseous hydrocarbons are released from primary containment and results in the need for action such as shutdown, evacuation or maintenance, to mitigate the effects of the loss of containment. Fugitive emissions should not be included.
Waste, Discharges and Emissions	Measurement and estimation protocols for wastes, discharges to water and emissions to air are published in '*Environmental Performance - Group Reporting Guidelines*". Waste, discharges and emissions will be reported in metric tons. One ton = 1000 kilograms, or 2200 pounds

Appendix G
Action Prioritization Detailed Instructions & Flowchart

This document provides detailed instructions on how to prioritize the corrective and preventive actions resulting from incident reports and audit reports. The process is also represented in the attached Action Prioritization Flowchart.

Step a: Determine the Severity of the Incident or Audit Finding Itself.
Step a in prioritizing action items is to determine the type of impact and Severity Level of the overall incident or audit finding. The primary types of impact may be health, safety, environment, property, reputation, business interruption/unit outage, or security/criminal act. The Severity rating may be between 1 and 5, with 1 being the most severe and 5 being the least severe.

For incidents and audit findings that are associated with real HSSE impacts, use the *Actual Severity Matrix* located in the Tr@ction system to determine the type of impact and Severity Level. For near misses and audit findings that are associated with potential HSSE impacts in the future, use the *Potential Risk Matrix* in the Tr@ction system.

Step b: Determine the Likelihood of the Incident or Audit Finding Occurring.
Step b is to determine the Likelihood of the incident, near miss, or audit finding occurring in the future. The following table should be used as a guide.

Table I: LIKELIHOOD DEFINITIONS

Likelihood	**Definition**
High	Expected to occur at least once per year.
Medium	Expected to occur from time to time (at least once every 5 years).
Low	Expected to occur not more than once in about 30 years, however, similar incidents have been known to occur in the industry.

Step c: Determine the Priority of the Total Incident or Audit Finding
Step c is to prioritize the incident or audit finding based on the Likelihood (see Step b) and Severity Levels (see Step a). The following table shows how to determine the Priority rating (A, B, or C) based on the Likelihood (High, Medium, or Low) and Severity Level (1-5).

Table II: TOTAL INCIDENT PRIORITY			
	Likelihood (see Step 2b)		
Severity (see Step a)	**High**	**Medium**	**Low**
1	A	A	B
2	A	**A**	**B**
3	**A**	**B**	**C**
4	**B**	**C**	**C**
5	**C**	**C**	**C**

The next table shows what the priorities A, B, and C signify.

Table III: PRIORITY DEFINITIONS		
Priority	**Tr@ction Entry**	**Definition**
A	**High**	1st Priority – Requires immediate attention and notification of senior management.
B	**Medium**	2nd Priority – Requires prompt attention by site management (normally within three months).
C	**Low**	3rd Priority –Requires attention during normal course of business activities, but after A's and B's are resolved.

Step d: Classify Individual Corrective and Preventive Actions.
In Step d, each corrective and preventive action associated with the incident or audit will be classified using the following classification scheme.

Table IV: INDIVIDUAL ACTION ITEM CLASSIFICATION		
Classification	**Definition**	**Examples**
Class 1	Immediate action to eliminate immediate causes with safeguards and to prevent incident recurrence. Control of accident scene.	Barricades/Tape, shutdown unit/equipment, Safety Alert, Roadblocks, Change process variable, Housekeeping, PPE
Class 2	Prompt action to eliminate "contributing or indirect causes", minimize consequences and to prevent incident recurrence.	Signs, Engineering out hazard, Reconfigure control systems, Safety Talks, Obtain/update MSDS, Change alarm setting, Revise/implement procedure, Repair/replace equipment, Instructions & Rotation of personnel.
Class 3	Requires action during the normal course of business activities and is necessary to complete the safety management long term process of ensuring incident cannot recur under same circumstances.	Survey industry, Sharing lessons learned, Management system changes, Engineering study, Critique of training module, Organizational changes, Job Task Observations, Routine inspections.
Class 4	No requirement for priority action and is not necessary to prevent recurrence of incident. Recommendation is made as a result of the incident investigation, but is not connected to the incident.	As-found drawing revisions not related to the incident, Typos on procedures.

Step e: Determine Priority of Individual Corrective and Preventive Actions.
Finally, in Step e, the priority of each individual corrective and preventive action will be prioritized based on the total incident or audit finding Priority (see Step c) and the individual action item Classification (see Step d), using the following table:

Table V: INDIVIDUAL ACTION ITEM PRIORITIES				
	Class 4	**Class 3**	**Class 2**	**Class 1**
Total Incident/Audit Finding Priority C	C	C	B	B
Total Incident/Audit Finding Priority B	**C**	**B**	**B**	**A**
Total Incident/Audit Finding Priority A	**B**	**B**	**A**	**A**

The A, B, and C priority ratings correspond to the priority definitions provided in Table III above

TEMPLATES/TOOLS

RM Incident/Near Miss Field Card Template

BP Major Incident Announcement

BP High Potential Incident Announcement

RM HSSE Incident/Near Miss Field Card Template

Use of the Tr@ction Reporting Field Card is optional, as this form has only been developed to attempt to make the loading of information into the Tr@ction system easier. The Field Card is designed to be a handy field tool to immediately capture initial information.

RM Environmental, Safety, or Health

Observation/Near Miss, or Incident Report

Site Name (required):_____

Reported By: _____

Incident Date/Time: _____

Primary Company Involved (required): _____

Observation or Incident Type:

☐ Near Miss/HSE Opportunity ☐ Material Release/Spill
☐ Injury/Illness ☐ Transportation Incident
☐ Property Loss/Damage ☐ Security or Crime
☐ Positive HSE Opportunity ☐ Other _____

Description of Observation or Incident:
Use keywords like those listed below:

- *Operation (drilling, lifting, maintenance, driving, sampling, etc.)*
- *Worker experience (new employee, 5-years experience, etc.)*
- *Potential result of incident (injury, property damage, spill, dust/emission, storm water discharge)*
- *Contributing conditions (weather, ground conditions)*

_____

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Continued other side

Golden Rule Violation:
☐ Permit to Work ☐ Working at Heights
☐ Energy Isolation ☐ Lifting Operations
☐ Ground Disturbance ☐ Driving Safety
☐ Confined Space Entry ☐ Management of Change
☐ None

Potential Immediate Cause:
☐ 1. Not following procedures ☐ 5. Protective System (PPE)
☐ 2. Improper use of tool/equip. ☐ 6. Defective tools/equip.
☐ 3. Improper protective methods ☐ 7. Exposure to conditions
☐ 4. Inattention/lack of awareness ☐ 8. Workplace layout
☐ Other _____

Immediate Action Taken:

_____

_____

_____

Severity Level:
☐ Actual Severity ☐ Potential Risk

Circle One: *High* *Low*
1 2 3 4 5

Probability of Reoccurrence:

Circle One: Low Med. High

Low – Expected to occur not more than once in about 30 years.
Medium – Expected to occur from time to time (at least once every 5 years).
High – Expected to occur at least once per year.

Corrective Actions Identified:

_____

_____

_____

Rev. 3, 06/15/04

BP Major Incident Announcement – RM URGENT

Distribution:

Reporting Unit:		**Issued by**:	
Country:		**Location of incident**:	
Date of incident:		**Time of incident**:	

Brief account of incident

People:	**No. of injuries**	**No. of fatalities**	**Description / details**
Employee			
Contractor			
Third party			

Business impact/damage/loss:
External agencies involved:
News media coverage seen:
What assistance has been requested:

BP person in charge of response/ investigation		**Head of Function**	
Office telephone:		Office telephone:	
Mobile telephone:		Mobile telephone:	
Home telephone:		Home telephone:	

Issued at:

RM High Potential Incident Report

Distribution:

Reporting Unit:		**Issued by:**	
Reporting Office:		**Location of incident:**	
Date of incident:		**Time of incident:**	
Brief account of incident (Report as fact only what you are clear is fact. Specify the status of anything else which you report, e.g., a belief or an estimate):			
Potential Outcome:			
Likely Causes:			
What was Damaged/Lost and/or nature of Damage/ loss:			
Local Authority Involvement:			
News Media Coverage:			
Person in Charge of Company Investigation:			

Announcement Issued at:

From: Bradford, William
Sent: Thursday, April 22, 2004 2:04 PM
To: Zahrte, Paul; Biondolillo, Matt; Borchardt, Bill; D'Hollander, Ray; Farmanian, Paul; Felter, Eric; Fong, Mary; Fullerton, Susan; Glaza, Edward; Hartsough, Scott; Hermance, George; Kintzer, Fred; Masterson, John; McCaffrey, Neil P; O'Loughlin, James; Owens, Matthew; Volpi, Richard
Cc: Hughes, Bill; Miller, Kelly M
Subject: IMPORTANT: INCIDENTS AND NEAR MISSES

Importance: High

All:

THIS E-MAIL CONTAINS IMPORTANT INFORMATION RE: REPORTING OF INCIDENTS AND NEAR MISSES. PLEASE READ IT CAREFULLY. Also pass it along to all Parsons personnel and subcontractors who need to know this.

Click on the link below to access five documents that I placed on LiveLink today:

https://livelink.parsons.com/livelink/livelink.exe?func=ll&objId=8260590&objAction=browse&sort=name

The documents are as follows:

1) GEM Incident Guidance
2) Tr@ction Primary Form
3) Tr@ction Supplemental Form
4) Near Miss Definition
5) Tr@ction Incident Field Card

Effective "immediately," we will follow the guidance provided by Item 1, and use Items 2-5 consistent with this guidance. Note that Items 2 & 3 REPLACE similar forms we have used in the past. Once again, we all need to submit near-miss reports frequently. You can continue to enter your own items on Tr@ction if you are comfortable doing that, or you can submit them to Kelly Miller in Syracuse, along with a complete job number, and she will do it for you. We will issue additional guidance on Tr@ction and related issues in the near future.

Thanks,
Bill

William L. Bradford
Toxicologist/BP Program Health & Safety Coordinator
PARSONS
290 Elwood Davis Road, Suite 312
Liverpool, NY 13088
Phone: (315) 451-9560
Fax: (315) 451-9570
william.bradford@parsons.com

www.Parsons.com

SAFETY - MAKE IT PERSONAL

HSE Incident or Near Miss Report

Reported by: _____

Date and time observed: _____

Site, Location (required): _____

Company Involved (required): _____

Type of Report:

☐ Near Miss/HSE Opportunity ☐ Spill/Release
☐ Injury/Illness ☐ Road/Transport Incident
☐ Property Damage ☐ Security/Theft
☐ Other _____

Incident Description: *use keywords like those listed below:*

- *Operation (drilling, lifting, maintenance, driving, sampling, etc.)*
- *Worker experience (new employee, 5-years experience, etc.)*
- *Potential result of incident (hand or back injury, slip, fall, property damage, spill)*
- *Contributing conditions (weather, lighting, ground conditions)*

_____

_____

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Continued other side

Incident Description (contd.):

_____

_____

_____

Potential Immediate Cause:

☐ 1. Not following procedures ☐ 5. Inadequate/lack of PPE
☐ 2. Improper tool/equip use ☐ 6. Defective tools/equip.
☐ 3. Lack of training ☐ 7. Workplace conditions
☐ 4. Inattentiveness ☐ 8. Workplace layout
☐ Other _____

Critical factor(s) contributing to incident:

_____

Immediate action taken:

_____

_____

_____

Severity: ☐ Actual ☐ Potential

Circle One: *Low* *High*
1 2 3 4 5

Probability of Reoccurrence:

Circle One: Low Med. High

Reviewed by/Date: _____

Corrective Actions Identified by Reviewer:

_____

_____

Supplier Annual Field Evaluation (SAFE)

	ANSWER
ATW/PTW Process	
1. Is there a HASP on site? Are qualified Permit Writers identified in the HASP?	
2. Have the appropriate JSAs been prepared for this site? Does the JSA address recent RM Incidents and shared learnings? (crushed finger incident in Portland, OR, broken toe from Pittsburgh, PA incident….etc)	
3. Is there an Authorization to Work for the site and has it been signed by everybody onsite?	
4. Has the primary contractor on site been trained in ATW?	
5. Are there signed permits onsite for permitted activities?	
6. Are appropriate/applicable procedures identified for current work (see ATW) and are copies onsite?	
7. Have all onsite personnel been trained in ATW?	
Driving Standard	
8. Are the vehicles that brought staff to the site fit for purpose? Perform a walk around inspection of all vehicles and record any deficiencies such as broken mirrors or broken headlights etc….assign action items for repairs.	
9. Have drivers on-site undergone Hands-on Driver Training or is it scheduled? Fatigue training?	
Training	
10. Do on-site workers have 40-hour OSHA training or country equivalent and are cards on site? 8-hr refreshers up to date?	
11. If this is a retail site, do on site workers have a valid BP Safety Passports?	
12. What training did you receive to perform your current job?	
13. How long have you been in your current position?	
14. What type of safety training is provided to subcontractors?	
Policy/Procedure	
15. Are the on-site workers protected by appropriate Traffic Control equipment?	
16. What is the drug/alcohol policy for this site?	
17. Are there any weapons on site?	

Supplier Annual Field Evaluation (SAFE)

	ANSWER
18. If drilling is taking place, has a pre-drilling checklist been completed prior to work start up? Was a utility mark-out performed prior to drilling? Were all borings cleared to five feet prior to drilling?	
19. How do you address a change in the work scope?	
20. What is your mobile phone policy for RM work?	
Emergency Response	
21. Is there a remediation system on site? Is there a phone number posted on the outside of the remedial compound for use in an emergency? Did you call the number and did the test call work?	
22. Does this site have an ER Plan onsite and when was it last revised?	
Other	
23. If there is a Subcontractor on site is the subcontractor working under the supervision of a Primary Contractor?	
24. Do employees perform behavioral-based safety audits?	
25. How are lessons learned communicated?	
26. How are past incidents/HSSE observations discussed?	
27. How many Near Misses have you generated this year?	
Description of Site(s) visited	
List any Safety Observations noted during visit	
List any Lessons Learned/Best Practices shared with the site or to be shared outside	

REMEDIATION MANAGEMENT - AUTHORIZATION TO WORK

PRE-TASK HAZARD REVIEW

TASK	EQUIPMENT
1. Site walk over	1.
2.	2.
3.	3.
4.	4.
5.	5.
6.	6.

Chemical / Products / Material

1. ☐ Hydrogen Sulfide	2. ☐ Benzene	3. ☐ Diesel	4. ☐ Hydrocarbon	5. ☐ Acid	6. ☐ Lead
7. ☐ Carbon Monoxide	8. ☐ Asbestos	9. ☐ Caustic	10. ☐ Gasoline	11. ☐ Heavy Metals	
12. ☐ NORMS	13. ☒ Other: chlorinated ethenes				

Hazardous Energy

19. ☐ Radiation	20. ☐ Electric	21. ☐ Pneumatic	22. ☐ Thermal-Steam
23. ☐ Hydraulic	24. ☐ Pressure	25. ☐ Mechanical	26. ☒ Fluids & Gases
27. ☐ Gravitational		28. ☐ Other: Site processes	

Other Potential Hazards

34. ☒ Walking / Working Surfaces		35. ☒ Traffic	36. ☐ Working at Heights	37. ☐ Pinch Points
38. ☐ Weather	39. ☐ Noise	40. ☐ Grinding	41. ☐ Heavy equipment	42. ☐ Sharp Edges
43. ☐ Hot Work	44. ☐ Security	45. ☐ Congested Area		46. ☐ Overhead Work
47. ☐ Body Position	48. ☐ Static Posture	49. ☐ Wind	50. ☐ Rotating Equipment	51. ☐ Lifting
52. ☐ Housekeeping	53. ☐ Spills	54. ☐ Underground Utility		55. ☐ Slopes and Terrain
56. ☐ Confined Space	57. ☐ Vibration	58. ☐ Ground Disturbance		59. ☐ Rigging
60. ☒ Vehicle Safety – Driving		61. ☐ Repetitive Motion		62. ☐ Container/Drum Labels
63. ☐ Waste	64. ☒ Heat/Cold Stress	65. ☐ Hand & Power Tools		66. ☐ Fitness to Work
67. ☐ Open Pipe	68. ☐ Boom Swing	69. ☐ Lighting	70. ☐ Exposure to poisonous plants / animals / bugs	
71. ☐ Overhead Electrical		72. ☐ Auger/Drill Stem		73. ☐ Other:

Required Safety Precautions

79. ☒ Safety Glasses	80. ☐ Goggles	81. ☐ Face Shield	82. ☐ Ear Plugs	83. ☒ Reflective Vest
84. ☒ Hard Hat	85. ☐ Escape Pak	86. ☒ Safety Toe Shoes	87. ☐ Ear Muffs	88. ☐ Respirator:
89. ☐ FRC	90. ☐ Supplied Air	91. ☐ Topical Creams / Repellants		92. ☐ Gloves:
93. ☐ Fire Watch	94. ☐ Drip Pans	95. ☐ Plastic Sheeting	96. ☐ Vac Truck	97. ☐ Fall Protection
98. ☐ Barricade	99. ☐ Fire Blanket	100. ☐ Upwind Areas Checked		101. ☐ Warning Signs
102. ☐ Flag Off Area	103. ☐ Life Lines	104. ☐ Fire Extinguisher at Jobsite		105. ☐ Sampling Prohibited
106. ☐ Seal Manholes, Sewers, and Catch Basins		107. ☐ Communication Method		108. ☐ Welding Shields
109. ☐ Continuous Monitoring		110. ☐ Wet Down Area		111. ☐ Ladder Tie Off
112. ☐ Tag Lines		113. ☐ Active Site Hazard Communication		
114. ☐ Fence Off Area		115. ☐ Other:		

REQUIRED PROCEDURES

☐ Drilling	☐ MOC	☐ Traffic Control	☐ LO/TO/Blinding	☐ Hoist/Lifting	☒ Journey Hazard Assessment

REQUIRED PERMITS

☐ Hot Work	☐ Ground Disturbance	☐ Confined Space	☐ Working from Heights	☒ None

Contractor(s) / Employee(s) Signatures: I have reviewed and understand the conditions of this permit, and its attachments. I will report hazardous conditions or acts identified on this job site to my supervisor and / or BP representative so they can be corrected as necessary.		1.	2.
		3	4.
5.	6.	7.	8.
9.	10.	11.	12.

Onsite Project Manager:	Date:	Location of Site Work:
Site Sanborn	Date/Time Issued: am/pm	Date/Time Expires: am/pm
☒ Is HASP onsite?	☒ Is ERP onsite?	☒ Is JSA onsite?
Authorization Signature:		

APPENDIX D

Material Safety Data Sheets (MSDS)

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Emergency Phone: 908-859-2151 • CHEMTREC: 202-483-7616 • CANUTEC: 613-996-6666

saved for recovery or recycling should be managed in an appropriate and approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. US Regulations require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Gaurd National Response Center is (800) 424-8802. Reportable Quantity (RQ)(CWA/CERCLA) : 1000 lbs.

Dispose of container and unused contents in accordance with federal, state, and local requirements.

SECTION 5 - Health Hazard Information

A. Exposure/Health Effects

Inhalation:

Corrosive! Inhalation of vapors can cause breathing difficulties and lead to pneumonia and pulmonary edema, which may be fatal. Other symptoms may include coughing, choking, and irritation of the nose, throat, and respiratory tract.

Ingestion:

Corrosive! Swallowing nitric acid can cause immediate pain and burns of the mouth, throat, esophagus and gastrointestinal tract.

Skin Contact:

Corrosive! Can cause redness, pain, and severe skin burns. Concentrated solutions cause deep ulcers and stain skin a yellow or yellow-brown color.

Eye Contact:

Corrosive! Vapors are irritating and may cause damage to the eyes. Splashes may cause severe burns and permanent eye damage.

Chronic Exposure:

Long-term exposure to concentrated vapors may cause erosion of teeth. Long term exposures seldom occur due to the corrosive properties of the acid.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders or eye disease may be more susceptible to the effects of this substance.

B. FIRST AID

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion:

DO NOT INDUCE VOMITING! Give large quantities of water or milk if available. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin Exposure:

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Eye Exposure:

Wash eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids

occasionally. Get medical attention immediately.

C. TOXICITY (RTECS, 1994)

Inhalation rat LC50: 244 ppm (NO2)/30M; investigated as a mutagen, reproductive effector.

SECTION 6 - Occupational Control Measures

Airborne Exposure Limits:

-OSHA Permissible Exposure Limit (PEL):
2 ppm (TWA), 4 ppm (STEL)
-ACGIH Threshold Limit Value (TLV):
2 ppm (TWA); 4 ppm (STEL)

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

Personal Respirators: (NIOSH Approved)

If the exposure limit is exceeded, wear a supplied air, full-facepiece respirator, airlined hood, or self-contained breathing apparatus. Nitric acid is an oxidizer and should not come in contact with cartridges and cannisters that contain oxidizable materials, such as activated charcoal.

Skin Protection:

Wear impervious protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

SECTION 7 - Storage and Special Information

Store in a cool, dry, ventilated storage area with acid resistant floors and good drainage. Protect from physical damage. Keep out of direct sunlight and away from heat, water, and incompatible materials. Do not wash out container and use it for other purposes. When diluting, the acid should always be added slowly to water and in small amounts. Never use hot water and never add water to the acid. Water added to acid can cause uncontrolled boiling and splashing. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

MATERIAL SAFETY DATA SHEET

NITRIC ACID, 70%

Effective Date: 12-08-95 Supersedes 04-04-95

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Addendum to Material Safety Data Sheet

REGULATORY STATUS

This Addendum Must Not Be
Detached from the MSDS
Identifies SARA 313 substance(s)

Any copying or redistribution of the MSDS
must include a copy of this addendum

Hazard Categories for SARA
Section 311/312 Reporting

Acute	Chronic	Fire	Pressure	Reactive
X	X			X

Product or Components of Product:	SARA EHS Sec. 302 RQ	SARA EHS Sec. 302 TPQ	SARA Sec. 313 Chemicals Name List	SARA Sec. 313 Chemicals Chemical Category	CERCLA Sec.103 RQ lbs	RCRA Sec. 261.3
NITRIC ACID, 70%						
Nitric acid (7697-37-2) 70%	1000	1,000	Yes	No	1000	No
Water (7732-18-5) 30%	No	No	No	No	No	No

All components listed on the TSCA Inventory.

SARA Section 302 EHS RQ:
Reportable Quantity of Extremely Hazardous Substance, listed at 40 CFR 355.

SARA Section 302 EHS TPQ:
Threshold Planning Quantity of Extremely Hazardous Substance. An asterisk (*) following a Threshold Planning Quantity signifies that if the material is a solid and has a particle

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size equal to or larger than 100 micrometers, the Threshold Planning Quantity = 10,000 LBS.

SARA Section 313 Chemicals:

Toxic Substances subject to annual release reporting requirements listed at 40 CFR 372.65.

CERLCA Sec. 103:

Comprehensive Environmental Response, Compensation and Liability Act (Superfund) Releases to air, land or water of these hazardous substances which exceed the Reportable Quantity (RQ) must be reported to the National Response Center, (800-424-8802); Listed at 40 CFR 302.4

RCRA:

Resource Conservation and Recovery Act. Commercial chemical product wastes designated as acute hazards or toxic under 40 CFR 261.33.

MATERIAL SAFETY DATA SHEET

HYDROCHLORIC ACID, 37%

MALLINCKRODT

Effective Date: 12-08-95 Supersedes 09-10-86

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Emergency Phone: 908-859-2151 • CHEMTREC: 202-483-7616 • CANUTEC: 613-996-6666

PRODUCT IDENTFICATION:

Synonyms: Muriatic acid
CAS No.: 7647-01-0
Molecular Weight: 36.46 (HCl)
Chemical Formula: HCl
Hazardous Ingredients: Hydrogen chloride

PRECAUTIONARY MEASURES:

POISON. DANGER! CORROSIVE. LIQUID AND MIST CAUSE SEVERE BURNS TO ALL BODY TISSUE. MAY BE FATAL IF SWALLOWED. HARMFUL IF INHALED. INHALATION MAY CAUSE LUNG DAMAGE.

- Do not get in eyes, on skin, or on clothing.
- Avoid breathing mist.
- Use only with adequate ventilation.
- Wash thoroughly after handling.
- Store in a tightly closed container.
- Remove and wash contaminated clothing promptly.
- This substance is classified as a POISON under the Federal Caustic Poison Act.

EMERGENCY FIRST AID:

In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes. If swallowed, DO NOT INDUCE VOMITING! Give large quantities of water or milk if available. Never give anything by mouth to an unconscious person. If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. In all cases call a physician. SEE SECTION 5.

SECTION 1 - Physical Data

Appearance: Clear, colorless fuming liquid.
Odor: Pungent odor of hydrogen chloride.
Solubility: Infinite in water with slight evolution of heat.
Boiling Point: 53 C (127 F); Azeotrope (20.2%) boils at 109 C (228 F)
Melting Point: -74 C (-101 F)
Specific Gravity: 1.18
Odor Threshold: 1 to 5 ppm
Volatiles by volume: 100%
Vapor Pressure (mm Hg): 190 @ 25 C (77 F)
Vapor Density (Air=1): No information found.
Evaporation Rate: No information found.
NFPA Ratings: Health: 3 Flammability: 0 Reactivity: 0

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SECTION 2 - Fire and Explosion Information

Fire:

Extreme heat or contact with metals can release flammable hydrogen gas.

Explosion:

Not considered to be an explosion hazard.

Fire Extinguishing Media:

If involved in a fire, use water spray.

Special Information:

In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.

SECTION 3 - Reactivity Data

Stability:

Stable under ordinary conditions of use and storage. Containers may burst when heated.

Hazardous Decomposition Products:

When heated to decomposition, emits toxic hydrogen chloride fumes and will react with water or steam to produce heat and toxic and corrosive fumes. Thermal oxidative decomposition produces toxic chlorine fumes and explosive hydrogen gas.

Hazardous Polymerization:

Will not occur.

Incompatibilities:

A strong mineral acid, concentrated hydrochloric acid is incompatble with many substances and highly reactive with strong bases, metals, metal oxides, hydroxides, amines, carbonates and other alkaline materials. Incompatible with materials such as cyanides, sulfides, sulfites, and formaldehyde.

SECTION 4 - Leak/Spill Disposal Information

Ventilate area of leak or spill. Wear appropriate personal protective equipment as specified in Section 6. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Neutralize with alkaline material (soda ash, lime), then absorb with an inert material (e.g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer! Whatever cannot be saved for recovery or recycling should be managed in an appropriate and approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. US Regulations require reporting spills and releases to soil, water and air in excess of reportable quantities. The toll free number for the US Coast Gaurd National Response Center is (800) 424-8802. Reportable Quantity (RQ)(CWA/CERCLA) : 5000 lbs.

Dispose of container and unused contents in accordance with federal, state, and local

requirements.

SECTION 5 - Health Hazard Information

A. Exposure/Health Effects

Inhalation:

Corrosive! Inhalation of vapors can cause coughing, choking, inflamation of the nose, throat, and upper respiratory tract. Inhalation of higher concentrations may cause lung damage.

Ingestion:

Corrosive! Swallowing hydrochloric acid can cause immediate pain and burns of the mouth, throat, esophagus and gastrointestinal tract. May cause nausea, vomiting, and diarrhea. Swallowing may be fatal.

Skin Contact:

Corrosive! Can cause redness, pain, and severe skin burns. Concentrated solutions cause deep ulcers and discolor skin.

Eye Contact:

Corrosive! Vapors are irritating and may cause damage to the eyes. Splashes may cause severe burns and permanent eye damage.

Chronic Exposure:

Long-term exposure to concentrated vapors may cause erosion of teeth. Long term exposures seldom occur due to the corrosive properties of the acid.

Aggravation of Pre-existing Conditions:

Persons with pre-existing skin disorders or eye disease may be more susceptible to the effects of this substance.

B. FIRST AID

Inhalation:

Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Ingestion:

DO NOT INDUCE VOMITING! Give large quantities of water or milk if available. Never give anything by mouth to an unconscious person. Get medical attention immediately.

Skin Exposure:

In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse. Get medical attention immediately.

Eye Exposure:

Wash eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

C. TOXICITY (RTECS, 1994)

Inhalation rat LC50: 3124 ppm/1H; oral rabbit LD50: 900 mg/kg (Hydrochloric acid concentrated); investigated as a tumorigen, mutagen, reproductive effector.

SECTION 6 - Occupational Control Measures

Airborne Exposure Limits:

-OSHA Permissible Exposure Limit (PEL):
5 ppm Ceiling
-ACGIH Threshold Limit Value (TLV):
5 ppm Ceiling

Ventilation System:

A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, "Industrial Ventilation, A Manual of Recommended Practices", most recent edition, for details.

Personal Respirators: (NIOSH Approved)

If the exposure limit is exceeded, a respirator with an acid gas cartridge may be worn for up to ten times the exposure limit. For emergencies or instances where the exposure levels are not known, use a positive-pressure, air-supplied respirator. WARNING: Air-purifying respirators do not protect workers in oxygen-deficient atmospheres.

Skin Protection:

Rubber or neoprene gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure to prevent skin contact.

Eye Protection:

Use chemical safety goggles and/or a full face shield where splashing is possible. Maintain eye wash fountain and quick-drench facilities in work area.

SECTION 7 - Storage and Special Information

Store in a cool, dry, ventilated storage area with acid resistant floors and good drainage. Protect from physical damage. Keep out of direct sunlight and away from heat, water, and incompatible materials. Do not wash out container and use it for other purposes. When diluting, the acid should always be added slowly to water and in small amounts. Never use hot water and never add water to the acid. Water added to acid can cause uncontrolled boiling and splashing. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

HYDROCHLORIC ACID, 37%

MALLINCKRODT

Effective Date: 12-08-95 Supersedes 09-10-86

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Emergency Phone: 908-859-2151 • CHEMTREC: 202-483-7616 • CANUTEC: 613-996-6666

Addendum to Material Safety Data Sheet

REGULATORY STATUS

This Addendum Must Not Be
Detached from the MSDS
Identifies SARA 313 substance(s)

Any copying or redistribution of the MSDS
must include a copy of this addendum

Hazard Categories for SARA
Section 311/312 Reporting

Acute	Chronic	Fire	Pressure	Reactive
X	X			

Product or Components of Product:	SARA EHS Sec. 302 RQ	SARA EHS Sec. 302 TPQ	SARA Sec. 313 Chemicals Name List	SARA Sec. 313 Chemicals Chemical Category	CERCLA Sec.103 RQ lbs	RCRA Sec. 261.3
HYDROCHLORIC ACID, 37%						
Hydrogen chloride (7647-01-0) 37%	5000	500	Yes	No	5000acid	No
Water (7732-18-5) 63%	No	No	No	No	No	No

All components listed on the TSCA Inventory.

SARA Section 302 EHS RQ:
Reportable Quantity of Extremely Hazardous Substance, listed at 40 CFR 355.

SARA Section 302 EHS TPQ:
Threshold Planning Quantity of Extremely Hazardous Substance. An asterisk (*) following a Threshold Planning Quantity signifies that if the material is a solid and has a particle size equal to or larger than 100 micrometers, the Threshold Planning Quantity = 10,000 LBS.

SARA Section 313 Chemicals:
Toxic Substances subject to annual release reporting requirements listed at 40 CFR 372.65.

CERLCA Sec. 103:
Comprehensive Environmental Response, Compensation and Liability Act (Superfund) Releases to air, land or water of these hazardous substances which exceed the Reportable Quantity (RQ) must be reported to the National Response Center, (800-424-8802); Listed

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at 40 CFR 302.4

RCRA:

Resource Conservation and Recovery Act. Commercial chemical product wastes designated as acute hazards or toxic under 40 CFR 261.33.

Please reduce your browser font size for better viewing and printing.

MSDS Material Safety Data Sheet

From: Mallinckrodt Baker, Inc.
222 Red School Lane
Phillipsburg, NJ 08865

MALLINCKRODT J.T.Baker

24 Hour Emergency Telephone: 908-859-2151
CHEMTREC: 1-800-424-9300

National Response in Canada
CANUTEC: 613-996-6666

Outside U.S. and Canada
Chemtrec: 202-483-7616

NOTE: CHEMTREC, CANUTEC and National Response Center emergency numbers to be used only in the event of chemical emergencies involving a spill, leak, fire, exposure or accident involving chemicals.

All non-emergency questions should be directed to Customer Service (1-800-582-2537) for assistance.

METHYL ALCOHOL

MSDS Number: M2015 --- ***Effective Date: 12/08/96***

1. Product Identification

Synonyms: Wood alcohol; methanol; carbinol
CAS No.: 67-56-1
Molecular Weight: 32.04
Chemical Formula: CH3OH
Product Codes:
J.T. Baker: 5217, 5370, 5794, 5807, 5811, 5842, 5869, 9049, 9063, 9067, 9069, 9070, 9071, 9073, 9075, 9076, 9077, 9091, 9093, 9096, 9097, 9098, 9263, 9893
Mallinckrodt: 3004, 3006, 3016, 3017, 3018, 3024, 3041, 3701, 4295, 5160, 8814, H080, H488, H603, V079, V571

2. Composition/Information on Ingredients

Ingredient	CAS No	Percent	Hazardous
Methyl Alcohol	67-56-1	100%	Yes

3. Hazards Identification

Emergency Overview

POISON! DANGER! VAPOR HARMFUL. MAY BE FATAL OR CAUSE BLINDNESS IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. CANNOT BE MADE NONPOISONOUS. FLAMMABLE LIQUID AND VAPOR. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS THE LIVER.

J.T. Baker SAF-T-DATA(tm) Ratings (Provided here for your convenience)

Health Rating: 3 - Severe (Poison)
Flammability Rating: 4 - Extreme (Flammable)
Reactivity Rating: 1 - Slight
Contact Rating: 1 - Slight
Lab Protective Equip: GOGGLES & SHIELD; LAB COAT & APRON; VENT HOOD; PROPER GLOVES; CLASS B EXTINGUISHER
Storage Color Code: Red (Flammable)

Potential Health Effects

Inhalation:
A slight irritant to the mucous membranes. Toxic effects exerted upon nervous system, particularly the optic nerve. Once absorbed into the body, it is very slowly eliminated. Symptoms of overexposure may include headache, drowsiness, nausea, vomiting, blurred vision, blindness, coma, and death. A person may get better but then worse again up to 30 hours later.
Ingestion:
Toxic. Symptoms parallel inhalation. Can intoxicate and cause blindness. Usual fatal dose: 100-125 milliliters.
Skin Contact:
Methyl alcohol is a defatting agent and may cause skin to become dry and cracked. Skin absorption can occur; symptoms may parallel inhalation exposure.
Eye Contact:
Irritant. Continued exposure may cause eye lesions.
Chronic Exposure:
Marked impairment of vision and enlargement of the liver has been reported. Repeated or prolonged exposure may cause skin irritation.
Aggravation of Pre-existing Conditions:
Persons with pre-existing skin disorders or eye problems or impaired liver or kidney function may be more susceptible to the effects of the substance.

---

4. First Aid Measures

Inhalation:
Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.
Ingestion:
Induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person.
Skin Contact:
Remove any contaminated clothing. Wash skin with soap or mild detergent and water for at least 15 minutes. Get medical attention if irritation develops or persists.
Eye Contact:
Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately.

---

5. Fire Fighting Measures

Fire:
Flash point: 12C (54F) CC
Autoignition temperature: 464C (867F)
Flammable limits in air % by volume:
lel: 7.3; uel: 36
Flammable.
Explosion:
Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Moderate explosion hazard and dangerous fire hazard when exposed to heat, sparks or flames. Sensitive to static discharge.
Fire Extinguishing Media:
Water spray, dry chemical, alcohol foam, or carbon dioxide.
Special Information:
In the event of a fire, wear full protective clothing and NIOSH-approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode. Use water spray to blanket fire, cool fire exposed containers, and to flush non-ignited spills or vapors away from fire. Vapors can flow along surfaces to distant ignition source and flash back.

6. Accidental Release Measures

Ventilate area of leak or spill. Remove all sources of ignition. Wear appropriate personal protective equipment as specified in Section 8. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Contain and recover liquid when possible. Use non-sparking tools and equipment. Collect liquid in an appropriate container or absorb with an inert material (e. g., vermiculite, dry sand, earth), and place in a chemical waste container. Do not use combustible materials, such as saw dust. Do not flush to sewer!

J. T. Baker SOLUSORB(tm) solvent adsorbent is recommended for spills of this product.

7. Handling and Storage

Protect against physical damage. Store in a cool, dry well-ventilated location, away from any area where the fire hazard may be acute. Outside or detached storage is preferred. Separate from incompatibles. Containers should be bonded and grounded for transfers to avoid static sparks. Storage and use areas should be No Smoking areas. Use non-sparking type tools and equipment, including explosion proof ventilation. Containers of this material may be hazardous when empty since they retain product residues (vapors, liquid); observe all warnings and precautions listed for the product.

8. Exposure Controls/Personal Protection

Airborne Exposure Limits:
For Methyl Alcohol:
- OSHA Permissible Exposure Limit (PEL):
200 ppm (TWA)
- ACGIH Threshold Limit Value (TLV):

200 ppm (TWA), 250 ppm (STEL) skin
Ventilation System:
A system of local and/or general exhaust is recommended to keep employee exposures below the Airborne Exposure Limits. Local exhaust ventilation is generally preferred because it can control the emissions of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, most recent edition, for details.
Personal Respirators (NIOSH Approved):
If the exposure limit is exceeded, wear a supplied air, full-facepiece respirator, airlined hood, or full-facepiece self-contained breathing apparatus.
Skin Protection:
Rubber or neoprene gloves and additional protection including impervious boots, apron, or coveralls, as needed in areas of unusual exposure.
Eye Protection:
Use chemical safety goggles. Maintain eye wash fountain and quick-drench facilities in work area.

9. Physical and Chemical Properties

Appearance:
Clear, colorless liquid.
Odor:
Characteristic odor.
Solubility:
Miscible in water.
Specific Gravity:
0.8
pH:
No information found.
% Volatiles by volume @ 21C (70F):
100
Boiling Point:
64.5C (147F)
Melting Point:
-98C (-144F)
Vapor Density (Air=1):
1.1
Vapor Pressure (mm Hg):
97 @ 20C (68F)
Evaporation Rate (BuAc=1):
5.9

10. Stability and Reactivity

Stability:
Stable under ordinary conditions of use and storage.
Hazardous Decomposition Products:
May form carbon dioxide, carbon monoxide, and formaldehyde when heated to decomposition.
Hazardous Polymerization:
Will not occur.

Incompatibilities:
Strong oxidizing agents such as nitrates, perchlorates or sulfuric acid. Will attack some forms of plastics, rubber, and coatings. May react with metallic aluminum and generate hydrogen gas.
Conditions to Avoid:
Heat, flames, ignition sources and incompatibles.

11. Toxicological Information

Methyl Alcohol (Methanol) Oral rat LD50: 5628 mg/kg; inhalation rat LC50: 64000 ppm/4H; skin rabbit LD50: 15800 mg/kg; Irritation data-standard Draize test: skin, rabbit: 20mg/24 hr. Moderate; eye, rabbit: 100 mg/24 hr. Moderate; Investigated as a mutagen, reproductive effector.

--------\Cancer Lists\----------

Ingredient	---NTP Carcinogen--- Known	Anticipated	IARC Category
Methyl Alcohol (67-56-1)	No	No	None

12. Ecological Information

Environmental Fate:
When released into the soil, this material is expected to readily biodegrade. When released into the soil, this material is expected to leach into groundwater. When released into the soil, this material is expected to quickly evaporate. When released into the water, this material is expected to have a half-life between 1 and 10 days. When released into water, this material is expected to readily biodegrade. When released into the air, this material is expected to exist in the aerosol phase with a short half-life. When released into the air, this material is expected to be readily degraded by reaction with photochemically produced hydroxyl radicals. When released into air, this material is expected to have a half-life between 10 and 30 days. When released into the air, this material is expected to be readily removed from the atmosphere by wet deposition.
Environmental Toxicity:
This material is expected to be slightly toxic to aquatic life.

13. Disposal Considerations

Whatever cannot be saved for recovery or recycling should be handled as hazardous waste and sent to a RCRA approved incinerator or disposed in a RCRA approved waste facility. Processing, use or contamination of this product may change the waste management options. State and local disposal regulations may differ from federal disposal regulations. Dispose of container and unused contents in accordance with federal, state and local requirements.

14. Transport Information

Domestic (Land, D.O.T.)

Proper Shipping Name: METHANOL
Hazard Class: 3
UN/NA: UN1230
Packing Group: II
Information reported for product/size: 350LB

International (Water, I.M.O.)

Proper Shipping Name: METHANOL
Hazard Class: 3.2, 6.1
UN/NA: UN1230
Packing Group: II
Information reported for product/size: 350LB

15. Regulatory Information

--------\Chemical Inventory Status - Part 1\---------------------------------

Ingredient	TSCA	EC	Japan	Australia
Methyl Alcohol (67-56-1)	Yes	Yes	Yes	Yes

--------\Chemical Inventory Status - Part 2\---------------------------------

Ingredient	Korea	--Canada-- DSL	NDSL	Phil.
Methyl Alcohol (67-56-1)	Yes	Yes	No	Yes

--------\Federal, State & International Regulations - Part 1\----------------

Ingredient	-SARA 302- RQ	TPQ	------SARA 313------ List	Chemical Catg.
Methyl Alcohol (67-56-1)	No	No	Yes	No

--------\Federal, State & International Regulations - Part 2\----------------

Ingredient	CERCLA	-RCRA- 261.33	-TSCA- 8(d)
Methyl Alcohol (67-56-1)	5000	U154	No

Chemical Weapons Convention: No TSCA 12(b): No CDTA: No
SARA 311/312: Acute: Yes Chronic: Yes Fire: Yes Pressure: No
Reactivity: No (Pure / Liquid)

Australian Hazchem Code: 2PE
Poison Schedule: S6
WHMIS:
This MSDS has been prepared according to the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all of the information required by the CPR.

16. Other Information

NFPA Ratings: Health: **1** Flammability: **3** Reactivity: **0**
Label Hazard Warning:
POISON! DANGER! VAPOR HARMFUL. MAY BE FATAL OR CAUSE BLINDNESS IF SWALLOWED. HARMFUL IF INHALED OR ABSORBED THROUGH SKIN. CANNOT BE MADE NONPOISONOUS. FLAMMABLE LIQUID AND VAPOR. CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT. AFFECTS THE LIVER.
Label Precautions:
Keep away from heat, sparks and flame.
Keep container closed.
Use only with adequate ventilation.
Wash thoroughly after handling.
Avoid breathing vapor.
Avoid contact with eyes, skin and clothing.
Label First Aid:
If swallowed, induce vomiting immediately as directed by medical personnel. Never give anything by mouth to an unconscious person. In case of contact, immediately flush eyes or skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse. If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen. In all cases get medical attention immediately.
Product Use:
Laboratory Reagent.
Revision Information:
New 16 section MSDS format, all sections have been revised.
Disclaimer:
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