



Intel Construction EHS

Processes & Procedures Manual

The Intel Construction EHS Processes and Procedures Manual establishes minimum Environmental Health and Safety (EHS) performance expectations of construction contractors working on Intel sites worldwide.

Overview

The following processes and procedures define Intel's expectations that meet and in some cases *exceed* the most stringent Environmental Health and Safety (EHS) laws worldwide.

Intel provides a copy of this EHS Processes and Procedures Manual (herein referred to as the "Manual") to all firms who receive a bid award. The contract that follows a bid award indicates that the firm is responsible for knowing and complying with the information provided in this Manual. Intel expects these performance requirements to be understood prior to work commencing, be included in a project specific EHS Plan and be strictly complied with.

At Intel Safety Is A Condition Of Employment.

Even though construction priorities may change, Safety Is A Value at Intel.

Intel believes in an Incident and Injury Free Environment.

Intel constantly strives to meet or exceed all applicable laws and regulations in the communities in which we live and work.

	T I T L E
Section 1	GENERAL/ADMINISTRATIVE
1.1	Construction Expectations
1.2	General Construction Rules
1.3	Alcohol and Drugs
1.4	Emergency Response Procedures
1.5	Raised Metal Floor (RMF) Management
1.6	First Aid and Medical Services
1.7	Gas Pad Operation
1.8	Harassment
1.9	Overtime Policy
1.10	Governmental Authority Inspection Visits
1.11	Odor Protocol
1.12	Pre-Task Planning
1.13	Roof Protocol
1.16	Safety Communication and Safety Management By Walking Around
Section 2	CONSTRUCTION SAFETY
2.1	Barricading and Safety Signage
	See Appendix A for General Signage
2.2	Compressed Gasses
2.3	Confined Space Management
2.4	Cranes, Hoists and Rigging
2.5	De-Install and Decontamination of Ducting/Piping
2.6	Dock Safety
2.7	Energized Electrical Work (EEW) and Electrical Safety
2.8	Elevators
2.9	Fall Protection
2.10	Forklifts
2.11	Ground Fault Circuit Interrupters (GFCI)/Assured Grounding
2.12	Haulage Equipment
2.13	Hazardous Energies
2.14	Housekeeping
2.15	Impalement Prevention
2.16	Ladders and Scaffolds
2.17	Lighting
2.18	Liquid Nitrogen Use

	T I T L E
2.19	Mobile Elevated Work Platforms (MEWP)
2.20	Cars, Pickups, Trucks, Industrial Vehicles, Golf Carts, All Other Powered Vehicles
2.21	Overhead Work
2.22	Personal Protective Equipment (PPE)
2.23	Powder Actuated Tools
2.24	Power Equipment and Hand Tools
2.25	Safety Showers and Eye Washes
2.26	Trenching and Excavations
SECTION 3	FIRE PREVENTION
3.1	General Fire Prevention
3.2	Fire Extinguisher Requirements for Active Construction Sites
3.3	Hot Work Permit
3.4	Fire System Work/Red Tag Process
3.5	Welding, Cutting and Brazing
SECTION 4	INDUSTRIAL HYGIENE
4.1	Confined Space
4.2	Construction Ergonomics
4.3	Hazard Communication
4.4	Heat and Cold Stress Management
4.5	Laser Safety
4.6	Potential Exposure Monitoring
4.7	Safety Permits
SECTION 5	ENVIRONMENTAL
5.1	Air Pollution Control
5.2	Projects Hazardous Material Control
5.3	Pollution Prevention/Environmental Incident Response
5.4	Solid Waste Management and Tool Disposal
5.5	Waste Water Management
SECTION 6	APPENDICES
APPENDIX A	Signage and Forms Examples
APPENDIX B	Example Energy Control Procedure Template
APPENDIX C	Control of Hazardous Energies Abandon Lock Removal Form
APPENDIX D	Site Planning Activities
APPENDIX E	Area Water Application Log Sheet
APPENDIX F	Chemical Application Checklist
APPENDIX G	Surface Preparation and Coating Checklist

	T I T L E
APPENDIX H	Mobile Equipment Setup Checklist
APPENDIX I	Demolitions Operations Checklist
APPENDIX J	Contractor Chemical Use Request Form
APPENDIX K	Hazardous Material Receipt Checklist
APPENDIX L	Hazardous Material Storage Checklist
APPENDIX M	Hazardous Material Storage Checklist
APPENDIX N	Daily Hazardous Material Storage Area and Point of Use Audit Checklist
APPENDIX O	Hazardous Material Work Observation Form
APPENDIX Q	Solid Waste Reduction Strategies
APPENDIX R	Solid Waste Estimations
APPENDIX S	Determining Solid Waste Management Return on Investment
APPENDIX T	Solid Waste Disposition
APPENDIX U	Site Planning Activities Checklist
APPENDIX V	Area Preparation for Erosion/Sediment Control Checklist
APPENDIX W	Area Preparation for Mobile Equipment Washing & Cleaning Checklist
APPENDIX X	Area Preparation for Small Equipment Washing & Cleaning Checklist
APPENDIX Y	Area Preparation for Leak Testing, Flushing, & Passivation of Systems Checklist
APPENDIX Z	Area Preparation for Dewatering Subsurface Soils Checklist
APPENDIX AA	Erosion/Sediment Control Sample Inspection Log
Appendix BB	Appendix BB Tool Scrap Policy



SECTION 1 – GENERAL/ADMINISTRATIVE

SECTION 1.1: CONSTRUCTION EXPECTATIONS

1. On Site Contractor Companies: It is each company's responsibility to ensure that their workers and subcontractor employees have a good working knowledge of their company's environmental, health and safety (EHS) rules and procedures along with those required by Intel.
2. Code Compliance: It is every employee's responsibility to notify their supervision, an Intel Sponsor or the Intel Project Manager of any code violations that would result from execution of the desired work or that occur inadvertently as a result of their work.
3. Damage to Facilities: Contractors are responsible and accountable for the work they perform at Intel. All damage to buildings, grounds, lawns, equipment and other areas that results from their project work, negligent or not, will be the responsibility of the contractor to correct. The Intel Project Manager must be advised immediately of any and all damage that occurs.
4. Ownership: The Intel-Contractor partnership requires all participants to accept a shared ownership in assuring that the total project is a success. In keeping with Intel's team philosophy, construction and design contractors are part of the project team from design to closeout. Construction management and contractors are expected to attend design meetings and participate as part of the design team as well as having ongoing involvement in the overall success of the project delivery process. Contractor active participation makes this work.
5. Permits: All work at Intel is to be done in compliance with permit requirements. This will include pre-task planning (PTP) and Intel's Site Incident Prevention Program (SIPP) permitting process. Intel's Sponsor or Project Manager can provide more information as needed.
6. Project and Safety Awareness: All construction personnel are required to:
 - a. Acknowledge that safety comes first.
 - b. Be familiar with chemical Material Safety Data Sheets (MSDS), Emergency Response Team (ERT) notification requirements as well as all EHS regulations, permits and policies that are applicable the project.
 - c. Be proactive and share the initiative in problem solving. If there is a better, safer or more cost-effective way of doing business, let your Supervision know.
7. Construction Project Direction: Primary direction as to site coordination, scope and schedule come from the Intel Project Manager or Intel Sponsor. In case of ERT activation, the ERT Leader will direct all response activities.
8. Project Team Expectations: Each project team will develop a set of reasonable team expectations and challenges at the start of every project. The success of the project is evaluated by the degree to which the project team meets the agreed upon expectations.
9. Understand Facilities System Impact: Be aware of your surroundings and the impact of the work you do. It is your responsibility to know and understand the systems you are working on.

SECTION 1.2: GENERAL CONSTRUCTION RULES

General site requirements include and are not limited to:

1. Good housekeeping is the rule, not the exception.
2. 100% fall protection is required for work over 6 feet.
3. A Zero tolerance policy applied for willful violations to any Fatality Prevention Program such as electrical safety, confined space, energized electrical work, crane activity, excavation, fall protection, trenching, and mobile elevated work platforms.
4. Never violate any warning signs or barricades – only enter cordoned off area with permission from area owner and only with appropriate PPE (refer to Section 2.22).
5. Observe all general traffic safety requirements and traffic signage.
6. Immediately report any unsafe conditions to your supervision. All unsafe conditions must be corrected prior to starting work. If it cannot be done safely, it will not be done.
7. Attend and participate in all scheduled safety meetings.
8. Immediately report any injury/illness to your supervision. Contractors are to immediately report any and all injuries, illnesses or incidents to Intel project management or Intel sponsor.
9. Immediately report to supervision the use of any medication that could cause physical or mental impairment or diminished concentration at work.
10. Prior to starting work, ensure that all hazards are defined and mitigated for each step of work in the Pre-Task Plan (PTP).
11. Wear all appropriate work clothing and personnel protective equipment (PPE). If in doubt, ask.
12. If you are not sure how to perform your assigned task safely, stop and contact supervision.
13. Horse play is not allowed and may result in termination of site access privileges.
14. It is Intel's policy that no weapons, including fixed blade knives or folding knives with blades in excess of 3-1/2 inches be brought on the premises and parking areas at any time.
15. Smoking and chewing tobacco is not permitted in any of the Intel buildings and on some patios. Designated smoking and chewing areas have been established. Smoking and chewing materials must be disposed of in proper containers, not on the ground. Smoking in the service yard is permitted only in designated areas.
16. Sleeping on site premises, except where permitted, may be may result in termination of site access privileges.
17. Operate only the equipment and tools that you have been trained and authorized to use.
18. Only rain water can enter a storm drain.
19. Cover or properly store materials outside to prevent them from entering storm drain system

20. Always employ erosion control practices to prevent soil from entering storm drain system
21. All chemical waste disposal and materials recycling must be coordinated through Intel using only Intel approved vendors.
22. Proper lifting techniques must be used for all material handling.
 - a. Think before you lift.
 - b. Plan the lift.
 - c. Move close to the load.
 - d. Keep your back straight.
 - e. Bend your knees and lift with your legs.
 - f. Do not lift and twist in the same motion.
 - g. Items 10' or greater in length shall require 2 people under the following conditions
 - i. when transporting material within an operating facility
 - ii. around or near operating equipment in support buildings to an operating facility

SECTION 1.3: ALCOHOL AND DRUGS

1. Intel is committed to fulfilling its legal and ethical responsibility to maintain a safe and efficient working environment. Persons who work while under the influence of illegal drugs or alcohol present a safety hazard to themselves and their co-workers. Drugs and Alcohol are not allowed at any time.
2. Drug Testing - When Intel has a reasonable suspicion that a contractor or supplier worker/representative is under the influence of alcohol or drugs, Intel may require the contractor or supplier employer to perform drug and/or alcohol testing of the individual or remove the individual from the premises. Intel also may require removal from site premises of any contractor or supplier worker/representative who refuses to cooperate during a reasonable investigation.
3. "Reasonable suspicion" is present when an observation of a change in a worker's behavior or conduct indicates noticeable performance impairment to the observer.
4. Drug and alcohol program (where legally applicable).
 - a. All Contractor's workers assigned to site premises will pass a screen test (urine analysis) for drugs and alcohol within seventy-two hours (3 days) before arriving on site; and
 - b. Contractor will perform immediate drug and alcohol testing of any worker so assigned if Contractor has a reasonable suspicion of drug or alcohol impairment; and
 - c. Contractor will perform an immediate drug and alcohol testing of any worker involved in an injury requiring a trip to the doctor.
5. No person will be allowed to work on the job site until they have cleared their drug/alcohol screen. All personnel testing positive for drugs or alcohol will not be permitted to work at the job site. Refusal of any drug/alcohol test constitutes grounds for immediate dismissal from the site.
6. Legal use of prescription or over the counter medications may result in impairment affecting the overall safety of the workforce. Personnel using prescription or over the counter medications which may impair their ability to work safely must inform their supervision or company occupational health representative prior to performing work.

SECTION 1.4: EMERGENCY RESPONSE PROCEDURES

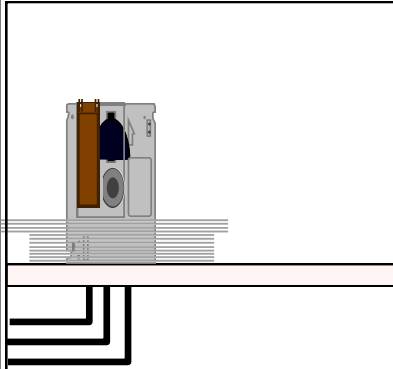
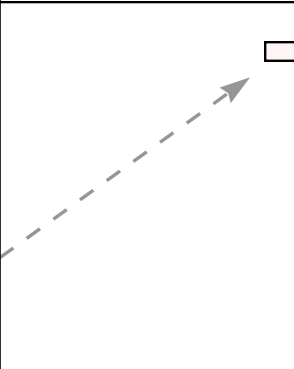
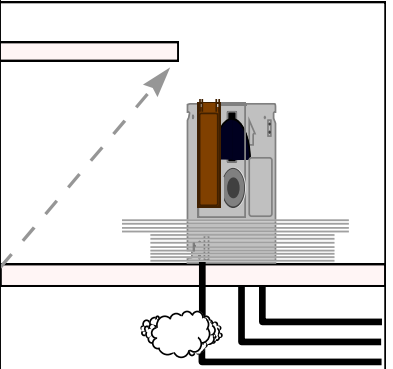
1. Contractor will contact project management prior to commencement of work, to define, document, and communicate clear roles and responsibilities of each in the event of an emergency.
2. At a minimum, Contractor agrees to communicate and ensure that all workers will comply with any instructions or directions of Intel's Emergency Response Team.
3. Contractor must ensure training is provided to workers which adequately informs all of site specific emergency response procedures, including, but not limited to:
 - a. Emergency notification procedures, including emergency phone numbers and contacts.
 - b. Emergency evacuation procedures, including routes of egress and designated assembly points.
 - c. Location of emergency medical treatment facilities and means of obtaining medical support in the event of an emergency.
 - d. Emergency job safe shutdown procedures.
 - e. Site spill response requirements and appropriate emergency response contact numbers
4. In the event of an evacuation, workers will evacuate immediately to the designated assembly area. Workers will be instructed to not stop to remove clean room attire or Personal Protective Equipment (PPE) or to retrieve personal belongings.
5. In the event of an area power outage, it may take up to 20 seconds for emergency power to illuminate the area. Move only when it is safe to do so.
6. In the event of an area emergency, proceed to a safe area and use an emergency phone or wall/area phone to contact security (or other approved communication means). When talking with security, stay on the line until told to hang up. Be prepared to tell security the location and nature of the emergency.
7. If agreed that the Contractor will create and maintain a formal emergency response team for the project, a documented site emergency response plan must be completed, reviewed and approved by Intel project management and maintained on the site.

SECTION 1.5: RAISED METAL FLOOR (RMF) MANAGEMENT

1. The areas beneath the raised floors have been determined to be a Confined Space. Initial hazard assessments were completed for areas beneath the raised floor and determined to be Non-Permit Required Confined Space during normal working conditions.
2. Non-Permit Required Confined Space (NPRCS): A confined space without a serious recognized safety or health hazard is considered a Non-Permit Required Confined Space.
3. Conditions that may not normally be present that can (or have the potential to) cause a serious safety or health hazard may change the classification of the raised floor area to a Permit Required Confined Space.
4. Permit Required Confined Space (PRCS): A confined space that has a serious recognized safety or health hazard present (e.g. hazardous atmosphere, unguarded equipment, chemical spills, etc.)

RAISED FLOOR ENTRY REQUIREMENTS

Examples

Non Permit Required Confined Space (NPRCS) Applies	No Confined Space Requirement	Permit Required Confined Space (PRCS) Applies
		
<p>Floor grate not removed</p> <p>No identified potential hazards in area based upon completion of Raised Floor Pre-Entry Checklist</p>	<p>Floor grate removed</p> <p>No overhead obstructions</p>	<p>Floor grate not removed</p> <p>Hazards identified in area cannot be controlled or eliminated based upon PRCS reclassification requirements</p>

5. Entry into a Non-Permit Required Confined Space does not require the issuance of a permit.
6. Contractor is responsible for having the following equipment on hand prior to removing a raised floor tile:
 - a. Barricade signage
 - b. Raised Floor Pre-Entry Checklist
 - c. Appropriate/site approved tile pullers
 - d. Rigid barricades or red barricade tape
7. Short Term Removal of Tiles (this applies only to situations where one tile is removed for immediate, non-entry work): Barricading will be used to mark off all possible traffic paths surrounding the removed tile.
8. Long Term Removal of Tiles (actual work/more than one tile): The open area of the floor must be completely barricaded with red Danger tape or supported by stanchions chains or rigid barricades prior to removing any tile. Upon exiting the open floor tile and leaving the area unattended (breaks, lunch or the end of the day) the tiles must be replaced.
9. Barricade signage must be filled out with all of the appropriate information and posted onto the barricade.
10. If entry beneath the raised floor tiles is required, it is considered entry into a Non-Permit Required Confined Space. The Raised Floor Pre-Entry Checklist must be filled out and the entrant must have a buddy present.

11. Buddy/Spotter responsibilities are for non-permit required entries only. If space is classified as a permit required space, they must follow the requirements of the site confined space program.
12. Ensure other work in the area does not affect the person working below the raised floor
13. Observe the person performing the work and notify ERT in the event of an emergency.
14. Notify person under the floor if conditions change.
15. If the space beneath the raised floor contains or has the potential to contain any recognized serious safety hazard (or if any of the questions on the Pre-Entry Checklist have been answered yes), it may be considered a permit required confined space and consultation with Construction EHS is required prior to entry.
16. When pulling floor tiles, all workers must use proper tile lifting tools and lifting technique (use force of the legs, no lifting and twisting, etc.)
17. All floor tiles will be stacked flat and barricaded to prevent the possibility of damage, tripping hazards, etc.
18. Floor tiles shall be stacked front to front and back to back and shall be stacked no higher than 8 tiles high.
19. When replacing floor tiles that have been removed and/or modified be sure to replace tiles and support structures exactly as they were designed. If unsure of the proper structural configuration, contact Intel project management for proper placement.
20. Contact your Site Construction EHS representative for additional required training.

SECTION 1.6: FIRST AID AND MEDICAL SERVICES

1. Contractor will provide first aid and medical services required for contractor workers unless specifically agreed and clearly defined, in writing, with Intel project management as part of the project plan.
2. The General Contractor/Construction Manager will assume responsibility for first aid/medical services management for all contractors under contract.
3. First aid kits are not allowed in the field.

SECTION 1.7: GAS PAD OPERATION

1. To better ensure worker safety, the hazardous gases utilized in the manufacturing processes at Intel's Fab facilities are located in a designated and specially designed "Gas Pad" or in specially marked gas cabinets in the Sub Fab.
2. Due to the potential hazards associated with such gas, access to the gas pad is controlled. Only those individuals who have completed the Gas Pad Certification program are allowed access to the pad.

3. All entries must be approved by the Gas Pad Engineering Team. Contact your Intel Project Manager for the appropriate contact information for Gas Pad access.
4. Only Intel or Intel designated Gas Pad personnel are allowed to operate specialty gas systems. Specialty gas systems are defined as: "Any gas system supplying gas from a cylinder or manifold box."
5. If the scope of a contractor's work includes working on the gas pad, prior arrangements need to be made through the Intel Project Manager for the contract workers to attend Gas Pad Certification training. Personnel performing work at the gas pad must be qualified for the type of work to be performed.

SECTION 1.8: HARASSMENT

1. Harassment is defined as "behavior which offends other individuals on the basis of sex, race, religion, national origin, sexual orientation or other protected bases and undermines the individual's morale, interferes with working relationships and undercuts the individual's ability to work effectively. Harassment includes verbal, physical, and visual conduct that creates an intimidating, offensive, or hostile work environment or interferes with work performance.
2. Intel is committed to providing a workplace free of harassment based on personal characteristics such as race, color, religion, sex, national origin, ancestry, age, disability, veteran status, gender identity, or sexual orientation. Intel strongly disapproves of and does not tolerate harassment of employees by managers or co-workers. We must treat co-workers, customers, and suppliers with dignity and respect.
3. Intel prohibits threats or acts of violence against co-workers, vendors, customers, or others. If you become aware of a threat or act of violent behavior in or near the Intel workplace, notify a manager of the details of the act or threat immediately. Managers who receive such information should immediately notify Intel Security.

SECTION 1.9: OVERTIME POLICY

1. Normal craft hours should not exceed 60 hours per week.
2. Work in excess of 60 hours per week must be pre-approved by the Intel Project Manager or designee and Intel Construction EHS representative. If projects require work in excess of 60 hours per week, a formal action plan must be in place that prevents fatigue that may contribute to hazardous work conditions. This plan must be presented to the Intel Project Manager or designee and Construction EHS representative for approval 48 hours before the extended shift or proposed overtime work begins.
3. Other variables that must be taken into consideration in limiting overtime are: health and physical condition of the individual worker, excessive heat, extremely strenuous work, etc.

SECTION 1.10: GOVERNMENTAL AUTHORITY INSPECTION VISITS

1. Intel's Project Manager, Security and Site EHS departments must be notified immediately of any governmental authority requested inspections or visits (e.g. OSHA or EPA). An Intel EHS department member will accompany the inspection team. Any violations or fines incurred by the Contractor will be the contractor's responsibility to correct.

SECTION 1.11: ODOR PROTOCOL

1. Contractors must notify the Intel Project Manager prior to conducting any work activities that generate odors. This includes, but is not limited to painting, grinding, sanding, heat shrinking, and cleaning. Odor control plans must be approved through the site specific control process.

SECTION 1.12: PRE-TASK PLANNING (PTP)

1. Pre-task planning is a process to be use as a job aid to accomplish our work safely and efficiently.
2. The PTP will eliminate incidents/accidents and business interruptions by utilizing and standardizing methods to recognize existing and potential hazards, establish work crew coordination, and identify appropriate mitigation measures to ensure all tasks are performed incident free.
3. All tasks to be performed on Intel construction projects must utilize the site PTP process prior to the work start.
4. A PTP will be prepared for each scheduled construction activity and shall consist of the following:
 - a. Review and clarification of the job scope.
 - b. Identify tasks to be performed to complete the work in a sequential order.
 - c. Identify the hazards associated with each step of the task.
 - d. Identify the mitigating actions your crew will take to control the safety, efficiency and operational risks and impacts this work might cause.
 - e. Develop contingency plans. In case things go wrong and/or if all risk cannot be fully safeguarded.
 - f. Communication and understanding of each crew member's roles and responsibilities for the task.
 - g. Establish ownership and accountability, everyone on crew signs the PTP. Foreman verifies PTP is sound.
 - h. Post the PTP at the work location for the crew to review and update throughout the day.
 - i. Communicate PTP to affected parties and or crews.
5. If conditions change, stop the work, assess and update the PTP. Prior to restarting work, the crew and the foreman must initial the PTP.

SECTION 1.13: ROOF PROTOCOL

1. Prior approval must be obtained from Intel's Project Manager or Site Security before accessing any roof area. Items must not be stored on or dropped from the roof. All personnel accessing any roof must receive a Roof Protocol briefing.
2. For tasks where there may be a fall exposure a specific fall protection plan must be reviewed prior to performing the task on the roof.
3. Eating, drinking and the use of tobacco products are prohibited on the roof.

Section 1.14: SAFETY COMMUNICATION AND SAFETY MANAGEMENT BY WALKING AROUND (SMBWA)

1. Contractors are required to have contractor management attend weekly Intel construction operations meetings (or as otherwise defined) with Intel Project Management to review all site related incidents and issues and ensure site communication.
2. All workers are required to attend a weekly safety meeting led by their safety group leader or foreman (tool box meetings) and a periodic mass safety meeting (as scheduled).
3. All contractors will establish a means for distributing written safety material as defined by the site (safety bulletins, site updates, lessons learned, etc.).
4. Contractor management is to verify compliance with Intel and EHS requirements by conducting site inspections and audits by Safety Management By Walking Around (SMBWA).
 - a. At minimum, a weekly walk around will be conducted by the Contractor management to reinforce correct behavior and coaching to modify unwanted behavior.
 - b. At least one walk will be recorded weekly.
 - c. Workers will participate in SMBWA by actively observing co-workers, encouraging and demonstrating an incident and injury free environment.

SECTION 2 – CONSTRUCTION SAFETY

SECTION 2.1: BARRICADING AND SAFETY SIGNAGE

1. Contractors will provide all necessary barricades, safety signs, stanchions, safety cones or safety warning tape as required to isolate and protect unsafe work areas from workers, pedestrians or vehicle traffic. For factory fabrication areas, barricades and stanchions may be provided, check with Intel Construction EHS at your site.
2. Where caution (yellow) warning tape or yellow chain is used as barricade material, signs denoting the hazard shall be secured to the barricade. Employees are allowed to pass or cross caution tape only after assessing the hazards posted on the signage. Caution tape and signs shall be erected around all sides of the controlled area, and at each access point.
3. Where danger (red or red and white) tape or red chain is used as barricade material, signs denoting the hazard shall be secured to the barricade. Personnel, except those engaged in the operation for which the tape/signs were erected, are not allowed to pass or cross danger tape. Danger tape and signs shall be erected around all sides of the controlled area, and at each access point.
4. Adequate and safe passage shall be established for workers at the active construction site to ensure effective separation between vehicular paths and walkways. Appropriate caution and warning sign shall be installed at crossings and when necessary, a flagman may also be used to control the traffic flow.
5. The walkways shall meet the applicable safety standards, including but not limited to proper barricade and floor/ground demarcation.
6. Contractors must post appropriate signage with name, phone or means of contact, duration of project and reasons for the barricade (hazard present). Sample signage can be found in Appendix A.
7. All barricading/signage will be removed after work is complete and hazard is eliminated.
8. Active Construction Site Exiting Requirements: Until the permanent Emergency Exit Signs have been installed at an active construction project, temporary EXIT signage shall be posted.
 - a. Locate the EXIT signs at every designated and completed EXIT.
 - b. Evacuation route signs must be located as necessary to ensure personnel are directed to a safe location, care should be taken to ensure that EXIT signs and Evacuation routes do not place the personnel into a more hazardous area such as an unfinished stairwell, discharge personnel into an open pit or other area deemed to be unsafe.
 - c. Provide additional EXIT signage in any areas that the EXITS are not easily visible, or become obstructed as interior walls and equipment is installed.

Barricading by hazard category:

Barricade & Sign Color	Hazard Class	Actions	Examples
Yellow	Occupational Hazard	Do not cross until hazard is identified and safe passage is assured.	Trip hazard areas.
Red	High or Imminent Hazard, Fatality Prevention	Never cross. If access is required, coordinate with contact person identified on signage.	Electrical Energized Work in progress, overhead suspended load, critical high pressure test, chemical introduction, fall exposure, open Fab floors, overhead work.
Orange	Emergency Response Zone	Never cross. If access is required, coordinate with ERT lead.	ERT response area only.
Factory			
Blue	Tool Qualification in process Only with permission from owner can you cross	Only with permission from owner can you cross	This tape defines equip that is in the process of being qualified for production
White Tape With Orange Font	Tool Move	Do not cross to avoid cross contamination	This tape is used for high risk copper designations during tool moves
Black	All Non Safety Related Issues	No restrictions on crossing	This tape defines lay down area, tool box or detail areas. This tape shall not be managed by safety unless it blocks any access or egress

SECTION 2.2: COMPRESSED GASES

1. Cylinders will be stored in designated places where they will not be damaged by passing or falling objects.
2. Storage facilities will be designated as a non-smoking area and posted with the names of the gases to be stored.
3. Outside storage of cylinders must be protected from adverse weather conditions.
4. All compressed gas cylinders will be stored with the protective caps installed on the cylinders. Replace the valve caps on cylinders when regulators are removed.
5. Cylinders will not be stored where the temperature is above 125° F or direct afternoon sunlight.
6. Do not accept for use, any cylinder that is not identified by a legible label or stencil. Cylinders of this type must be tagged and returned to the supplier.
7. Do not alter numbers or permanent markings on cylinders. Labeling cannot be easily removable.
8. The person responsible for handling, transporting or connecting/using the cylinder must check the identity of the gas by reading the label. If necessary, review the MSDS concerning potential hazards.
9. Never transport cylinders without valve caps in place.
10. Cylinders must be transported by specially designated hand-trucks or by securing (e.g. platform carrier) in an upright position with cylinder caps in place. They must not be allowed to roll around in the bed of a truck. Never use a sling to carry or haul cylinders.
11. All cylinders must be removed from trucks prior to use, except those specially mounted for cutting and heating torches (e.g. welding trucks).
12. Cylinders will never be taken inside tanks or vessels where work is to be performed. Gas lines will be removed from space when work is not in progress.
13. Oxygen/acetylene cutting/heating torches will have check valves on the torch body.
14. You shall not:
 - a. Drop the cylinders or permit them to strike each other violently.
 - b. Attempt to fill a cylinder.
 - c. Transfer gases from one cylinder to another or mix gases.
 - d. Place cylinders where they might become part of an electrical circuit. They must never be used as a grounding connection.
 - e. Strike an arc on, or torch burn cylinders
 - f. Cylinders, cylinder valves, couplings, hose, regulators, gauges, fittings and apparatus will be kept free from oily or greasy substances. Cylinders or apparatus must not be handled with oily hands or gloves.
 - g. Gas hoses will be provided with non-metallic covering.
 - h. Fuel lines will be thread-specific and color identified. Red for fuel lines and green for oxygen.

SECTION 2.3: CONFINED SPACE MANAGEMENT

1. A confined space is any space that:
 - a. Is large enough and so configured that an worker can bodily enter (any portion of the body) and perform assigned work,
 - b. Has limited or restricted mean for entry and/or exit, and
 - c. Is not designed for continuous occupancy
2. A non-permit confined space is a confined space that does not contain any hazard capable of causing death or serious physical harm nor has the potential to contain an atmospheric hazard.
3. Permit Required Confined Space - is a confined space that has one or more of the following characteristics:
 - a. Contains or has the potential to contain a hazardous atmosphere,
 - b. Contains a material that has the potential for engulfing an entrant,
 - c. Has an internal configuration such that an entrant could be trapped or asphyxiated by inwardly converging walls or by a floor which slopes downward and tapers to a smaller cross section, or
 - d. Contains other recognized serious safety or health hazard.
4. Contractors must ensure all confined spaces are identified and managed using documented site confined space management methods.

SECTION 2.4: CRANES, HOISTS AND RIGGING

1. All crane work must be pre-planned to ensure the safety of the process. It is the responsibility of the contractor and/or crane equipment supplier to ensure any crane used on an Intel site is in safe working condition. Documentation must be supplied with the crane and reviewed by project management prior to any work.
2. Documentation required:
 - a. The crane has been inspected and maintained in accordance with the manufacturer's specifications, OSHA and ASME B.30 standards.
 - b. The crane complies with all applicable regulatory or special requirements of the site.
 - c. Cranes will be equipped with an anti-two-blocking device.
 - d. Operator's manual must be available in the cab of the crane.
 - e. The crane has a current annual inspection by a person qualified to inspect and certify cranes.
 - f. Logs for daily, weekly, monthly and annual inspections are available in the crane cab for inspection.
 - g. The operator must have a current crane safety-training card or documentation verifying the operator's qualifications to operate this specific type of crane. The crane operator will be licensed by the local authority having jurisdiction.
 - h. Written safe crane operating procedures are available in the cab of the crane. These are to be written by the contractor. The operator's manual may not be used in lieu of separate safety procedures.
3. Permission (in the form of a lift plan) is required for any lift that is 80% or greater of the rated capacity of the crane pick configuration.
4. A written lift plan must be submitted to project management for a multiple crane pick.

5. At no time will a crane be operated with computer systems or limit switches in a non-functioning or override condition.
6. The weight of the load must be known (not estimated) or means taken to accurately weigh the load before any pick.
7. All outriggers must be fully extended and set on stable ground and solid cribbing before any lift.
8. All rigging gear shall be inspected before each use. Damaged equipment must be immediately taken out of service. All rigging gear must be rated to a safe capacity for the lift.
9. Use of a dedicated signal person must be considered in site planning.
 - a. The use of Multiple Lift rigging procedures as defined in CFR1926.753(e) are allowed with acceptance from the Intel CSC EHS Manager and CSC Project Manager. A detailed plan must be submitted to Intel EHS as a part of the CPEP for acceptance that addresses at least each item found in 1926.753(e) including Training documentation, rigging documentation and auditing process.
10. No personnel will ride the hook.
11. Critical picks will require a lift plan. Critical pick is if collision, upset, or dropping could result in any one of the following:
 - a. Unacceptable risk of personnel injury or significant adverse health impact (on or off site).
 - b. Significant release of a hazardous material or other undesirable conditions.
 - c. Undetectable damage that would jeopardize future operations or the safety of a facility.
 - d. Damage that would result in unacceptable delay to schedule or other significant program impact such as loss of vital data.
 - e. If the load requires exceptional care in handling because of size, weight, close-tolerance installation, high susceptibility to damage, or other unusual factors.
12. Due to the seriousness of crane safety procedures, any operator or supervisor who violates these procedures will be subject to immediate disciplinary action, up to and including removal from the site.
13. Multiple cranes on site (whenever two or more cranes are in use on a site) the following procedures must be followed:
 - a. A written safety plan must be submitted to project management for the use of multiple tower cranes, including a tower crane and mobile cranes, prior to work on a site.
 - b. Crane use meetings will be held daily before work starts. Attending:
 - i. Operators.
 - ii. Dedicated signal personnel and riggers.
 - iii. Foremen of crews using cranes.
 - c. A written pre-plan must be submitted as part of the project safety plan.
 - d. Radio communications between all operators and signal personnel.
 - e. Quadrants of operation clearly defined.
14. Tower cranes:
 - a. Tower crane selection and sizing must be pre-planned as a function of the project safety plan.
 - b. Consideration must be given to local conditions, potential permits and licensing required.
 - c. A specific tower crane erection, jumping, or dismantling safety meeting must be held at the job site prior to these work processes. The following checklist will be used as a guide

for issues to be addressed at this meeting. Tower crane erection, jumping, dismantling checklist:

- i. All tower cranes must be erected, jumped, dismantled, and operated in accordance with the manufacturer's specifications and procedures. The operating manual must be provided on site.
- ii. The lessor/owner must provide the erector and project management with a list of verified weights of all major component parts.
- iii. The lessor/owner must provide NDE data on all critical components.
- iv. The lessor/owner must provide the erector and project management with written procedures for erecting, jumping (when appropriate), and dismantling each major component. This will include proper torque specifications and procedures.
- v. The lessor/owner must ensure that all components of the crane arrive at the job site in safe working condition.
- vi. The lessor/owner, erection contractor, mobile crane operator, and/or representative, and project supervision must make a physical inspection of the erection site to ensure adequate setup area and proper radius and load chart capacities.
- vii. The erector must provide a load chart for the crane to be used in the erection process.
- viii. The erector must provide a fall protection work place for the erection, jumping, or dismantling process.
- ix. The erector's representative must be on the job site to monitor the erection process.
- x. Soils and footings for both the tower and mobile crane must be verified as adequate for the erection process.
- xi. The erector's representative must inspect, test, and certify, in writing, that the tower crane is in safe working condition prior to any work being performed.

SECTION 2.5: DE-INSTALL AND DECONTAMINATION OF DUCTING/PIPING/TOOLS AND OTHER EQUIPMENT

1. De-Install 6D: Demolition of any tool, equipment or construction materials that had previously come in contact with ANY CHEMICAL must be performed in strict accordance with Intel's demolition and decon procedures referred to as the "6D Decon Process". Additionally, many of the tasks described in this section should be performed by specially trained demolition and decon contractors with hazardous materials training and liability insurance. All work must be carefully coordinated through Intel's Project Manager, Construction EHS or Site EHS personnel.
2. All persons involved in projects which involve de-installation and decontamination of tools and Facilities that contain hazardous energies (referred to as 6D) are required to be trained in the sites 6D requirements or equivalent before they may conduct any de-install activities. These persons include Environmental Health and Safety, Tool Owners, Technicians, Construction / Project Coordinators, Craft Contractors, General Site Services, Facility Owners (e.g. Air Products, FST).
3. Contractor Roles and Responsibilities
 - a. Obtain all permits to perform deinstall activities
 - b. Attend required training classes
 - c. Follow IQ QA/QC or equivalent Procedures
 - d. Complete Safe Plan of Actions (SPA) or Pre-task Plan (PTP) for work
 - e. Confirm Chemical Use Decontamination Labels (CUDL) and Decontamination Safety Level 2 (DSL2) are complete before commencing any de-install or decon work
 - f. Follow all EHS procedures and requirements (check with your Intel CEHS).

- g. For those employees that are remediating hazardous waste ie lead clean up for example, the company must provide documentation per employee of hazardous waste training and the company must have pollution insurance.**

4. Decontamination of Ducting/Piping
 - a. Cleaning of equipment and materials must be done in conjunction with their removal. Storage or staging of these materials is not permitted unless specifically outlined in these guidelines or approved by the Intel project management. Odor permit(s) are need prior to chemical use.
5. Solvent equipment, piping, ducting, valves, etc.
 - a. Solvent gloves and safety glasses must be worn when handling these materials. High concentrations of solvent vapors may also require a respirator. Contact the Intel Construction EHS or Site EHS personnel for an evaluation of the hazard if solvent vapors are present.
 - b. Any free liquid in solvents equipment or materials must be drained into a solvent drain line or transferred to an approved container and pumped into the bulk solvent systems.
 - c. Note: Some Intel sites may have a corrosive decontamination station in the hazardous waste building. Never rinse any solvent material at this station. Equipment must be sufficiently dismantled and piping cut into sections less than 4 feet to aid in the evaporation process. Contact Intel's Construction EHS or Site EHS personnel on proper solvent disposal protocol.
6. Corrosive equipment, piping, ducting, valves, etc.
 - a. Acid gloves, safety glasses, apron, full-face shield, and boots must be worn when handling these materials. If corrosive vapors are present, contact Intel's Construction EHS or Site EHS personnel for an evaluation.
 - b. Any free liquid in corrosive equipment or materials must be drained into an acid waste line or transferred to an approved container, sealed and labeled and taken the hazardous waste room or disposed of via the Intel Construction EHS's or Site EHS' direction. Fluoride-containing waste (hydrochloric acid (HF) and ammonium fluoride) are disposed of in HF system. All other corrosives go to the acid waste system. The corrosive decontamination station (if available) in the hazardous waste management facility, if applicable, can be used for all corrosives, except HF.
 - c. After draining free liquids, corrosive equipment and materials must be rinsed with water at the corrosive decontamination station until the pH on all surfaces is between 5 and 9. If a pH in this range cannot be achieved or there is no corrosive decontamination station, contact Intel's Construction EHS or Site EHS for further instructions.
 - d. Acid gloves, bags and acid aprons cannot be rinsed off and must be disposed of as corrosive debris.
7. Vacuum equipment, piping, valves, etc.
 - a. Acid gloves, safety glasses, apron, full-face shield, boots must be worn when handling these materials. If corrosive vapors are present, contact Intel's Construction EHS or Site EHS.
 - b. High vacuum piping and valves frequently have films or deposits that are water reactive and/or corrosive. Contact Intel's Construction EHS or Site EHS for proper decontamination procedures. In many cases this work effort may require specially trained decontamination contractors.
 - c. Never spray these items with water or other liquids as corrosive vapors may be generated.
 - d. Check with Site EHS to see if the House Vacuum systems are a hazardous waste
8. Arsenic equipment, piping, ducting, ducting, material, etc.

- a. Latex gloves, Tyvek suit, and safety glasses must be worn when handling this equipment or related materials.
 - b. For house vacuum piping contaminated with arsenic or other hazardous waste, wrap and tape pipe ends to contain dust and debris. The pipe must be wiped inside and out with wet wipes to remove all remaining residues. These wipes will be treated as hazardous and placed into waste bags, as well as gloves and suits. –The contractors removing this waste must be hazardous waste training, appropriate medical monitoring and have appropriate insurance.
 - c. For other materials contaminated with arsenic, contact Intel’s Construction EHS or Site EHS personnel for case-by-case handling, cleaning, and disposal. NEVER discard materials piping without Intel Environmental Engineering EHS approval.
9. Disposal of cleaned materials and equipment:
- a. Materials and equipment that is appropriately cleaned and destined for disposed must be immediately dismantled or cut into manageable pieces. Labels that identify the chemical residues present before cleaning must be removed or unreadable by painting.
 - b. For routine-cleaning methods as outlined above, materials composed completely of metal may be placed in the metal recycle roll-off. All other items must be disposed of in general trash roll-off.
 - c. Disposal of the Intel equipment/tools must follow the Intel Scrap specification.
 - d. Tool main body and process chambers shall be rendered useless
 - e. Only use a recycler contracted by Intel that provides a Certificate of Destruction (COD) for Main Body to assure a complete tool is not sold on secondary market
 - f. For special case-by-case cleaning instructions, such as those for arsenic, equipment and material must not be disposed of until reviewed by Intel’s Construction EHS or Site EHS personnel.
10. Warehousing or transferring cleaned equipment
- a. If equipment will be warehoused or transferred inside or outside of Intel, a decontamination label must be attached and equipment-cleaning form must be completed before a transfer will be authorized.
 - b. Ensure that all process and construction equipment that had come into contact or previously held any chemicals are transferred in strict accordance to Intel’s 6D Decon Process. Forms are available from Intel’s Construction EHS or Site EHS personnel.

SECTION 2.6 DOCK SAFETY

1. Supervisors are responsible for ensuring that workers under their supervision only operate devices that they have been properly trained and authorized on.
2. Supervisors are responsible for implementing and maintaining a dock safety audit program. Audits are to be conducted as a minimum on a monthly basis.
3. Workers are responsible for:
 - a. Working in a safe manner and adhering to all safety rules.
 - b. Wearing the appropriate personal protective equipment.
 - c. Completing all required safety training in the prescribed time.
 - d. Participate in the dock safety audit program.
4. Loading/Unloading Trucks
 - a. If the dock is not enclosed, a chain or other barricade must extend the open area of the dock.
 - b. Stay alert at all times and assure that there is an adequate operating area outside of the truck to permit working clear of other dock personnel or other activities.

- c. Prior to loading/unloading a truck, let the driver know when you are going to start the job and when you complete the job.
- d. Direct truck driver to the waiting area while loading/unloading truck.
- e. During the loading/unloading process have the ignition turned off to prevent exhaust odors from migrating into the building.
- f. Verify that the vehicle is restrained with a wheel chock or with an automated vehicle restraint.
- g. Wear safety toed shoes, gloves and eye protection.
- h. If a driver leaves the trailer to be loaded/unloaded ensure that it is properly stabilized.
- i. Inspect the truck floor for safety hazards such as holes or broken boards.
- j. Use provided lighting when inspecting, loading and unloading trucks.
- k. Ensure shipment and support pallets are stable and not oversized.
- l. Do not handle hazardous chemicals unless you are authorized and qualified.
- m. Use proper lifting techniques when moving materials.
- n. Operate equipment only if you are trained and licensed to do so.
- o. Use pallet jacks, lift trucks and other mechanical means to move loads, only after trained and authorized.
- p. Carry loads as low as possible and watch for clearance.
- q. Keep dock gateways clear. Don't block areas where pallet jacks need to move.
- r. Never block exit ways, emergency equipment or electrical panels.
- s. Never jump from the dock into the dock pit. Use stairs or authorized means of access/egress.
- t. Keep off collapsible and stationary roller beds.

5. Truck Inspection

- a. Do not load or unload a truck that poses a safety hazard.
- b. Inspect the floor of the truck for debris that may pose a tripping hazard.
- c. If the floor of the truck is wood, look for rot or loose planks. If metal, look for rust or dips.
- d. Before loading a truck find out what the truck's weight capacity is and inform the driver if the load is going to exceed that capacity.
- e. Make sure that the loads are adequately secured.

6. Dock Locks (where available)

- a. Make sure the driver is aware of signal lights on the dock (if provided).
- b. When the restraint is engaged, the driver will see a red light and you will see a green light.
- c. A loud horn will sound if the hook is not secure on the truck. Do not load or unload until the hook is secure.
- d. When the restraint is disengaged the driver will see a green light and you will see a red light. Failure to have the restraint fully disengaged could result in damage to the truck or trailer.

7. Wheel Chocks

- a. Ensure that the truck/trailer is chocked. Wedge the tapered end of a chock in front of at least one of the rear tires (curved side of chock snug against the tire).
- b. Make sure the chock is firmly placed and stable. If chocks have chains attached, make sure the chains are not beneath the chock.
- c. Ensure that the chock has been removed before the driver attempts to pull away.

8. Pallets

- a. Do not use if damaged or broken.
- b. Do not walk on pallets.
- c. Band or stretch-wrap pallet loads before loading them onto trucks and when storing loaded pallets on overhead racks or shelves.

- d. When storing pallets lay them flat and do not stack more than nine high. They may be stacked eleven pallets high if there are two individuals to do the "lift".
 - e. Store pallets neatly, maintaining a clear pathway.
 - f. Leather gloves must be worn when handling pallets.
 - g. Never double-stack loaded pallets without supervisor's authorization.
 - h. Always wear safety glasses and hand protection while cutting the banding on pallets.
9. Housekeeping
- a. Never block any aisles or exits.
 - b. Do not block electrical panels or fire extinguishers.
 - c. Keep aisles free of trip/slip hazards. Ensure that any spills are properly cleaned up and contact Intel Security so that they can activate the ERT (as necessary).
 - d. Put all trash in the appropriate waste container.
 - e. Put tools and other items away when you're through with them.
 - f. Keep the tops of cabinets, workbenches and other working surfaces free of debris.
10. Service Yard/Pad Area
- a. When driving in the service yard obey all traffic signs and be alert to traffic and pedestrians.
 - b. When walking in the service yard stay on designated walkways and be alert for traffic.
 - c. No smoking in the service yard or on the dock.
 - d. Park only in designated areas.
 - e. Wear the proper personal protective equipment while in the service yard/pad area.
 - f. Report any pavement deficiencies (i.e. potholes) or lighting is not working.
11. If you are unsure about loading or unloading freight, ask for help.

SECTION 2.7: ENERGIZED ELECTRICAL WORK (EEW) AND ELECTRICAL SAFETY

1. For EEW policies and procedures reference Intel Corporate Environmental Health and Safety (EHS) Energized Electric Work (EEW) Standard on supplier.intel.com
2. General Electrical Safety
 - a. Temporary power cords must be protected from damage. Those run overhead will be adequately secured (with a non-conductive means) at-least 7 feet from floor level. No temporary cords will be draped over equipment or left where potentially walked, driven upon, or pinched between doors.
 - b. Cords used on construction sites must be of an extra hard use type.
 - c. Precautions must be taken to verify the location of underground/inner wall electrical interferences prior to beginning excavation/penetration activities. If unsure of the exact location of these interferences, protective equipment must be worn.
 - d. No use of metal keyhole saws to penetrate sheet rock walls for electrical installations.
 - e. Metal fish tape will not be used for pulling wire into energized panels or where the potential exist for contact with energized components.
 - f. Non-metallic pulling socks will be used when pulling wire into energized panels or where the potential exists for contacting energized components.
 - g. Precautions must be taken to verify the location of underground/inner wall electrical interferences prior to beginning excavation/penetration activities. If unsure of the exact location of these interferences, protective equipment will be worn.
 - h. Heavy equipment will not be operated in close proximity to overhead lines.
3. Work in Hazardous Locations:

- a. Work on equipment that is rated for use in hazardous locations that will violate the classified location rating is not permitted. For example, work which requires the opening of explosion proof enclosures in a classified location must be performed in a de-energized, locked and tagged out state
- b. If there is a potential for combustible vapors in a work area a test of the area must be performed with a combustible gas meter prior to and during the duration of any EEW. Work must be halted immediately if any combustible gas or vapor is detected.

SECTION 2.8 ELEVATORS

1. Personnel will not ride freight elevators and freight will not be transported on personnel elevators.
2. Check the load rating of the elevator before placing freight aboard. Occupant loading or capacity ratings of elevators will not be exceeded.
3. Elevators will not be used during a fire or other emergency.
4. Elevators must not be stopped between floors. Should an elevator fail between floors, activate the elevator alarm or use the emergency phone to request help.
5. Do not attempt to board an elevator once the doors begin to close.
6. The transportation of cryogen dewars within an elevator with personnel present in the elevator at the same time is prohibited.
7. Cryogen dewars will be secured to prevent movement during elevator transport.

SECTION 2.9: FALL PROTECTION

1. Equipment and systems will be designed and implemented based on the project safety plan to ensure that fall protection is provided and used. Elements of the project safety plan will include methods to ensure appropriate anchorages are provided throughout the construction site. Work with fall exposures that exceed 6 ft. requires a fall protection safety plan designed specifically for that site. The plan must be submitted to project management prior to any work.
2. All workers on Intel premises must use 100% fall protection such as life lines and railings when working within 6 feet of open-sided roofs, ledges, catwalks or when parapets are less than 42 inches high. Workers must be tied off 100% of the time when exposed to a fall, which may require a double lanyard system.
3. All open holes or leading edges on roofs, floors etc. where a fall hazard of 6 feet or greater exists must be protected using fall protection, safety netting or standard guardrails. If the use of fall protection, safety netting or standard guardrails is infeasible or adds a greater hazard to employees an approved alternate fall protection plan must be developed. The alternate fall protection plan must be approved by the Intel Construction EHS manager.
4. Approved full-body harnesses (no belts) will be worn when exposed to a fall of 6 feet or greater.
5. Daisy chaining of fall protection devices is prohibited.
6. The use of 100% fall protection systems and equipment is mandatory. Any worker found in violation of fall protection requirements is subject to removal from the site.

7. If and when a static line system is utilized, documentation will be required to demonstrate the effectiveness of that system.
8. All personnel who might be exposed to fall hazards will be trained and training records will be available at the request of project management. The written certification record shall contain the name or other identity of the employee trained, the date(s) of the training, and the signature of the person who conducted the training or the signature of the employer. If the employer relies on training conducted by another employer or completed prior to the effective date of this section, the certification record shall indicate the date the employer determined the prior training was adequate rather than the date of actual training.
9. Covers for holes in floors, roofs, and other walking/working surfaces shall meet the following requirements:
 - a. Covers located in roadways and vehicular aisles shall be capable of supporting, without failure, at least twice the maximum axle load of the largest vehicle expected to cross over the cover.
 - b. All other covers shall be capable of supporting, without failure, at least twice the weight of employees, equipment, and materials that may be imposed on the cover at any one time.
 - c. All covers shall be secured when installed so as to prevent accidental displacement by the wind, equipment, or employees.
 - d. All covers shall be color coded or they shall be marked with the word "HOLE" or "COVER" to provide warning of the hazard. The labeling shall be in English and in the primary language for the country the work is being completed.
 - e. Note: This provision does not apply to cast iron manhole covers or steel grates used on streets or roadways.

SECTION 2.10: FORKLIFTS

1. Reference Intel Corporate Environmental Health and Safety (EHS) Powered Industrial Trucks (PIT) Standard/Guideline on supplier.intel.com
2. Contractors shall follow all elements of the Intel PIT standard, however all training and qualifications must be completed by the contractor. Forklift operators will be trained and qualified on the type of equipment they are operating.

SECTION 2.11: GROUND FAULT CIRCUIT INTERRUPTERS (GFCI)/ASSURED GROUNDING

1. DEFINITIONS
 - a. Competent person - one who is 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.
 - b. Temporary Power - Power that is supplied from a designated location such as a facilities panel or skid for the purpose of providing power for the duration of a project (s) that is maintained either by a dedicated contractor or each individual contractor.
2. PROCEDURES/EXPECTATIONS
 - a. All 125-volt or greater, single-phase, 15-, 20-, and 30-ampere receptacles on construction sites, that are for temporary power and are available for use, must have approved ground-fault circuit interrupters (GFCI).
 - b. GFCI protection must be at the outlet end of the circuit.
 - c. Extension cords or other devices with listed ground-fault circuit interrupter protection for personnel identified for portable use are acceptable.
 - d. GFCI's shall be tested before each day's use.

- e. Receptacles more than 125-volt, single-phase, 30-amperes must have protection that complies with above requirements, or an assured equipment grounding conductor program.
 - f. Each cord set, attachment cap, plug and receptacle of cord sets, and any equipment connected by cord and plug, except cord sets and receptacles which are fixed and not exposed to damage, shall be visually inspected before each day's use for external defects (examples deformed or missing pins or insulation damage) and for indications of possible internal damage. Equipment found damaged or defective shall be removed from service and not be used until repaired.
3. Assured equipment grounding conductor program. When required, the Contractor shall establish and implement a program covering all cord sets, receptacles which are not a part of the building or structure, and equipment connected by cord and plug which are available for use or used by Contractor employees for construction related activities. This program must include the following minimum requirements:
- a. A written description of the program, including the specific procedures adopted by the Contractor, shall be available at the jobsite for inspection.
 - b. The Contractor shall designate one or more competent persons to implement the program.
 - c. The following tests shall be performed quarterly on all cord sets, receptacles which are not a part of the permanent wiring of the building or structure, and cord- and plug-connected equipment required to be grounded. Fixed extension cords, other devices and receptacles not exposed to damage shall be inspected at least every 6 months.
 - i. All equipment grounding conductors shall be tested for continuity and shall be electrically continuous.
 - ii. Each receptacle and attachment cap or plug shall be tested for correct attachment of the equipment grounding conductor. The equipment grounding conductor shall be connected to its proper terminal.
 - d. All required tests shall be performed before first use, before equipment is returned to service following any repairs, before equipment is used after any incident which can be reasonably suspected to have caused damage (e.g. when a cord set is run over), and at intervals not to exceed 3 months.
 - e. The contractor shall not permit the use of any equipment which has not met the requirements of this program.
 - f. All cords and equipment must be labeled with contractor company name.
 - g. Tests shall be recorded. These records shall identify each receptacle, cord set, and cord- and plug-connected equipment that passed the test and shall indicate the last date it was tested or the interval for which it was tested. This record shall be kept by means of logs and color coding, and shall be maintained until replaced by a more current record. The record shall be made available on the jobsite for inspection.
4. Contractor shall follow all OSHA/NEC and Intel guidelines for temporary power installations and repairs where applicable or necessary.
5. A grounding terminal or grounding-type device on a receptacle, cord connector, or attachment plug shall not be used for purposes other than grounding.
6. Assured Equipment Grounding Log: The method of acceptable record keeping is to establish a color code for marking cord sets and cord- and plug-connected equipment.
- a. Colored plastic or vinyl electrical tape shall be placed on both ends of cords and cord- and plug-connected equipment to denote the quarter that the tests were performed.
 - b. These tests shall be completed by the first day of each month listed below:

Month #	Month	Color Code
---------	-------	------------

1	January	White
4	April	Green
7	May	Red
10	June	Orange

SECTION 2.12: HAULAGE EQUIPMENT

1. Haulage and earth moving equipment (dump trucks, ready mix trucks, scrapers, graders, dozers, etc.) operating on Intel property must be equipped with audible alarms that sound a continuous warning that the vehicle is backing that is audible above the surrounding noise level or the vehicle is only allowed to be backed up when an spotter signals it is safe to do so. Standard pickup trucks are not included.
2. Vehicles used to transport employees shall have seats firmly secured and adequate for the number of employees to be carried. Seatbelts shall be available and worn for all vehicle occupants.
3. All vehicles in use shall be checked at the beginning of each shift to assure that the following parts, equipment, and accessories are in safe operating condition and free of apparent damage that could cause failure while in use:
 - a. service brakes, including trailer brake connections;
 - b. parking system (hand brake);
 - c. emergency stopping system (brakes);
 - d. tires;
 - e. horn;
 - f. steering mechanism;
 - g. coupling devices;
 - h. seat belts;
 - i. operating controls; and
 - j. Safety devices.
4. All defects shall be corrected before the vehicle is placed in service. These requirements also apply to equipment such as lights, reflectors, windshield wipers, defrosters, fire extinguishers, etc., where such equipment is necessary.
5. All vehicles must use wheel chocks when parked at any Intel loading dock.
6. All speed limits and designated routes must be strictly followed.

SECTION 2.13: HAZARDOUS ENERGIES

1. Contractor shall define scope of work and all possible sources of stored energy per the Contractor Energy Control Procedure Template located in Appendix B.
2. A lock and tag are required for each worker at all points of stored energy. Group lockout is not allowed.
3. Each lock shall have only one key that is controlled by the individual performing the work on the energy being controlled.
4. In coordination with an Intel representative, shut down the equipment or system using normal shutdown procedures.

5. Isolate the equipment or system by operating the switch, valve, or other energy-isolating device. Block, bleed down, or otherwise control all stored energy.
6. In coordination with an Intel representative, verify that isolation and de-energization has been accomplished by attempting to operate the equipment or system and verifying with appropriate diagnostic equipment. Electrical Energized Work (EEW) procedures must be employed until work area has been tested and proven to be de-energized.
7. Each person working on the equipment or system must secure each energy-isolating device with a lock and tag.
8. Prior to startup, check the equipment or system to ensure it is in safe operating condition with all guards, etc. in position.
9. Notify all affected workers and Intel representatives (if appropriate) that lockout/tagout is being removed.
10. In coordination with Intel representatives, restore power source and verify safe operating conditions.
11. Contractors shall adhere to the site policy for abandoned lock removal (Appendix C). This policy must at a minimum, ensure an attempt is made to reach the employee who attached the lock. If the employee can not be reached, verification must be made that the employee who applied the lock is not at the facility. This must include a walkthrough of the equipment effected by the lockout, and the employee must be notified of the lock removal prior to resuming work.

SECTION 2.14: HOUSEKEEPING

1. Work areas must be kept clean, free of debris, tripping hazards, etc. at all times.
2. Use a vacuum cleaner/system to immediately remove any debris or dust generated when operating cutting or grinding equipment or when performing other dirt or particle generating activities.
3. Work areas must not be left without a full, comprehensive clean up. No materials will be left that could present a trip or other hazard. If materials need to be left, appropriate hazard identification systems must be employed (barricades, signage, etc.).
4. Materials are not to be left loose in racks or unsecured.
5. Adequate containers shall be provided for collection and separation of waste and trash. Waste shall be disposed of at frequent and regular intervals.

SECTION 2.15: IMPALEMENT PREVENTION

1. Consider impalement hazards when pre-task planning.
2. When possible, plan the project so that elevated work will be conducted prior to creating impalement hazards (e.g. vertical projections from lower levels). Space limited and high activity tasks are also best conducted prior to creating impalement hazards.
3. Remove or eliminate (e.g., cut off) impalement hazards. When it cannot be done, guard the hazard. Horizontal and vertical projections can often be protected with approved re-bar caps.

4. Store thin diameter piping and other impalement hazards so that the ends do not project into walkways and work areas.
5. Flag the ends of thin diameter piping and other impalement hazards when moving it within the work area.

SECTION 2.16: LADDERS AND SCAFFOLDS

1. Ladders
 - a. Anytime a worker is working and is exposed to a fall hazard over 6 vertical feet, as measured from the sole of their shoe, personal fall protection will be used.
 - b. Exception:
 - i. Maintain at least three points of contact with the ladder at all times;
 - ii. Maintains center of body between the ladder's vertical supports;
 - iii. Co-worker supports the ladder or it is secured from movement; and
 - iv. Faces the front of the ladder.
2. General Portable Ladder Requirements:
 - a. Ladders must not be placed in front of doors opening toward the ladder unless door is blocked, open, locked and posted or guarded.
 - b. Ladders shall be capable of supporting the following loads without failure:
 - i. Each self-supporting portable ladder: At least four times the maximum intended load, except that each extra-heavy-duty type 1A metal or plastic ladder shall sustain at least 3.3 times the maximum intended load.
 - c. Only one person on ladder at a time.
 - d. Only fiberglass ladders are allowed. No wood or metal ladders.
 - e. When storing, ladders must be laid on their side or secured with a chain, cable or approved storage device when stored upright.
 - f. Manufacturer's information must be on the side of the ladder.
 - g. Post and/or secure area with cones or barrier tape to keep area separate from other workers.
 - h. Carry tools or equipment in tool belts or bags, handed up or down to different levels or lifted by a mechanical hoist.
 - i.
3. Scaffolds
 - a. Each scaffold and scaffold component shall be capable of supporting, without failure, its own weight and at least 4 times the maximum intended load applied or transmitted to it (6 times for suspension scaffolding).
 - b. All scaffolds/work access platforms must be installed by qualified persons.
 - c. Before starting work on a scaffold, inspect visually to determine that:
 - i. Handrails, mid-rails, toe-boards, and decking are in place.
 - ii. All wheels are locked on movable scaffolds.
 - iii. Locking pins are in place at each joint.
 - d. Do not change or remove scaffold members unless authorized.
 - e. No one is allowed to ride on a rolling scaffold when it is being moved unless approved by EHS. Remove or secure all tools and material on the deck before moving.
 - f. Guard rails, including top and mid rails, and toe-boards must be installed on all open sides and on ends of scaffolds and platforms more than 10 feet above the ground or lower surface.
 - g. Do not climb on, or work from, any scaffold, handrail, mid-rail, or brace member unless the scaffold has been designed by the manufacturer for this purpose. Otherwise use a ladder to access and egress the scaffold.

- h. All scaffolds must be erected level and plumb, on a firm base and kept clear of debris.
 - i. Scaffolds must be tied off or stabilized with outriggers when the height is more than three times the smaller base dimension. Scaffolds must also be tied off horizontally every 30 (30') feet. Please contact a qualified individual for additional questions and details regarding acceptable tie offs.
 - j. Access ladder or equivalent means of safe access must be provided on all elevated work platforms.
 - k. When space permits, all scaffold platforms must be equipped with standard 42-inch high handrails rigidly secured (not wired), standard 21-inch high mid-rails, completely decked with safety plank or manufactured scaffold decking, and rigidly secured toe-boards, all four sides.
 - l. Adjusting or leveling screws shall not be used on scaffolds equipped with wheels. Adjusting screws shall not be extended more than 12 inches of thread.
 - m. Be sure you know the safe working loads on all scaffolds.
 - n. Do not alter any scaffold member by welding, burning, cutting, drilling, or bending
 - o. Do not rig from scaffold handrails, mid-rails, or braces.
 - p. Patented Metal Scaffolding: Generally, parts and sections of scaffolding made by one manufacturer are not to be used with another manufacturer's.
 - q. Personnel must wear safety harnesses and be properly tied off on any scaffold platform over 4 feet and not equipped with standard handrails, midrails, or completely deck.
 - r. A signage system will be used to communicate the status of the scaffold.
 - s. Rolling scaffolds will be used only on level, smooth surfaces, or the wheels must be contained in wooden or channel iron runners. Watch for overhead clearance when moving. Casters must be pinned and locked.
4. Suspended Scaffolding
- a. Swinging stages, toothpicks, boatswain chairs, float, and needle beams require special approval prior to use.
 - b. Attach and secure safety harness before stepping on these scaffolds and do not remove until clear of the scaffold. Tie off to independent lifeline or building structure. One lifeline per person.
5. Decking
- a. Planks of two-inch scaffold grade lumber or laminated wood. Store on dunnage separately from ordinary lumber.
 - b. Manufactured aluminum decking is for scaffolds only.

SECTION 2.17: LIGHTING

- 1. Light can be provided by permanent, temporary, or spot source. The minimum illumination intensities in foot-candles will be as follows:

AREA	FOOT-CANDLES
General Construction Area Lighting	5
General construction areas, concrete placement, excavation and waste areas, access ways, active storage areas, loading platforms, refueling, and field maintenance areas.	3
Indoor: warehouses, corridors, hallways, and exit ways.	5
General construction plant and shops (e.g. sub-fab, fan attic, fab level, batch plants, mechanical and electrical equipment rooms, carpenter shops, store rooms, and indoor toilets and workrooms, break and lunch rooms).	10
First aid stations and offices.	30

SECTION 2.18: LIQUID NITROGEN (LN₂) USE

2. The following is required for All Fill Operations:
 - a. Written procedures or specifications outlining equipment, standard operating guidelines, hazards and emergency procedures shall be developed and maintained.
 - b. Certification of employees shall be based on a written job spec/procedure, and appropriate hazcom and handling training.
 - c. Personal protective equipment (PPE) for filling operations that are designed to protect skin surfaces from cryogenic liquids including, face, hands and feet, shall be worn (e.g. face shield, goggles, apron and gloves).
 - d. Inspect all PPE before and after use.
 - e. Use of Fill Station equipment shall be strictly limited to certified and authorized personnel.
 - f. Procedures shall be documented and available for all filling locations.
 - g. Equipment maintenance procedures, including those for dewars and fill stations, shall meet or exceed manufacturers' specifications and shall be documented.
 - h. Dewars shall be transported using appropriate carts and secured to prevent accidental tipping. Exception: small hand-carried dewars.
 - i. Connections and valves on fill stations and dewars shall be clearly labeled in accordance with the Intel Pipe, Tube, and Duct Labeling Standard in the Master Design Specs. There should also be hazard warning labels that indicate LN₂'s asphyxiant and cryogenic properties.
 - j. Fill stations and dewars shall be clearly labeled indicating contents and their associated hazards.
3. Requirements for LN₂ indoor bulk filling operations (greater than 500 liters LN₂ capacity):
 - a. The refill station shall be equipped with an approved overfill sensing device (e.g. Automatic Dewar Filling System, ADF-10, Vacuum Barrier Corporation).
 - b. A manual attendant is required for continuous operation.
 - c. The area shall be equipped with an Oxygen deficiency monitoring system tied to local and remote alarms. This system is interlocked to stop flow of LN₂ at the station. (Alarm level = 19.5% O₂). Questions can be referred to Life Safety Systems (LSS). Note: For a potential exception to this guideline see Intel Industrial Hygienist (if oxygen deficiency assessment determines O₂ monitoring is not necessary).
 - d. Plainly labeled and easily accessible emergency shut-off capability shall be located inside and outside the fill area.
 - e. Until such time as Items 3.a and 3.b are in place, operations shall be conducted in a constantly attended mode or using a buddy system that ensures supervised entry into the area.
4. Requirements for LN₂ indoor manual fill and autofill operations
 - a. If supply containers are larger than 25 liters, filling shall be performed with a valve requiring constant manual activation, or with a buddy present.
 - b. Minimize direct exposure while filling LN₂ into equipment or transferring into smaller dewars. Use portable LN₂ dewars with transfer control and insulated transfer tubes with fill sensor (e.g. IFO/F24's Tayloy-Wharton device with footswitch and control device, or other BKM's that may be available from the Intel Lab Safety Team, and site EHS for many operations).
 - c. If hand pouring LN₂ is inevitable, use 5-liter dewar to fill equipment to prevent large splashes.
 - d. Conduct an Oxygen Deficiency Assessment: If the total room volume exceeds 350 ft³ per liter of LN₂ capacity of the largest single container (based on 760 mm Hg, 25C) (e.g. #1: If a

7 liter dewar is used, the total room volume must exceed 2450 ft³ -or- e.g. #2: An 80' X 55' X 8' room could use a 100 liter dewar), then additional control measures listed below are not required.

- e. If the size of the room does not exceed this minimum additional controls must be implemented to prevent single point failures, which may result in a hazardous atmosphere (< 19.5% O₂). Redundant controls provide an additional level of control over the primary pipes or vessels containing the cryogen. Secondary controls may include one or more of the following: leak detection devices, flow limiting orifices, excess flow detectors, or a room ventilation system capable of diluting maximum LN₂ flow rates (e.g. 350 cfm per 1 liter per minute (lpm) LN₂ flow).
 - f. Limit or regulate use of autofill equipment for operations that can be safely done using non-automatic equipment or process unless the following criteria are met:
 - i. Continuous testing necessary and non-filling would impact work and tool.
 - ii. Autofill is an integral, sealed part of the tool requiring no regular intervention to maintain.
 - iii. Fill requires off-shift or week-end support.
5. Requirements for indoor LN₂ usage:
- a. Limit the quantity of LN₂ use to the lowest practical amount.
 - b. Conduct an Oxygen Deficiency Assessment. If the total room volume exceeds 350 ft³ per liter of LN₂ capacity of the largest single container (based on 760 mm Hg, 25C) (e.g. #1: If a 7 liter dewar is used, the total room volume must exceed 2450 ft³ -or- e.g., #2: An 80' X 55' X 8' room could use a 100 liter dewar)., then additional control measures are not required.
 - c. If the size of the room does not exceed this minimum, additional controls must be implemented to prevent single point failures, which may result in a hazardous atmosphere (< 19.5% O₂). Redundant controls provide an additional level of control over the primary pipes or vessels containing the cryogen. Secondary controls may include one or more of the following: leak detection devices, flow limiting orifices, excess flow detectors, or a room ventilation system capable of diluting maximum LN₂ flow rates (e.g. 350 cfm per 1 lpm LN₂ flow). Valves are properly rated for pressure and flow to protect isolated lines.
6. Storage/use requirements for construction cryogenics or liquefied gasses (e.g argon or nitrogen dewars):
- a. If the dewar is being left in an area unsupervised (ex: overnight or while workers are not on site), it must be stored outside, or in a large open area with mechanical HVAC system air supplied (e.g. subfab open area)
 - b. If the dewar is being used in a supervised area, it must have mechanical HVAC ventilation present or doors and available windows must be secured open.
 - c. Never store a construction dewar in a small area with closed doors (or not fully open doors) and no HVAC air supply.
 - d. All construction dewars must be labeled with the name, company and phone # of the dewar owner (individual responsible for the dewar) and verbiage stating that if the dewar continuously vents in an indoor space for longer than 3 minutes, occupants should leave the dewar area and call the site emergency number. Continuous venting could result in oxygen deficiency.
 - e. All dewars must be used & stored in the upright position, and must be secured to prevent movement in an earthquake/seismic event.
 - f. Contact Intel EHS if you do not meet this criteria or are unsure/unaware of available ventilation
 - g. Exclusions
 - Compressed gas cylinders
 - Non-Intel occupied spaces

h. Emergency procedures:

- If a dewar vents in an indoor space for longer than 3 minutes, evacuate the area and notify site emergency personnel.
- Any spill of liquefied gas or cryogen requires evacuation of the area and notification site emergency personnel.

SECTION 2.19: MOBILE ELEVATED WORK PLATFORMS (MEWP)

1. Reference Intel Corporate Environmental Health and Safety (EHS) Mobile Elevated Work Platform (MEWP) Standard on supplier.intel.com
2. Spotters for MEWPs are as follows (this supersedes what is found in the Intel Corporate Environmental Health and Safety MEWP Standard).
 - a. Spotters are required for movement (vertical or horizontal) within 2 feet of an operating system and around or within operating facilities that have been classified as Op-Ready and on roadways. In addition the following applies for spotters:
 - i. Shall be required to wear reflective vests in addition to their general construction PPE when spotting in active roadways.
 - ii. Must have direct communication with the operator during any movement.
 - iii. When it is not possible for the spotter to see obstructions, an alternative plan to ensure zero incidents must be created.
 - iv. Must be in line of sight and in visual contact
 - v. Are required when possible contact with facilities or structure in a non-operating/occupied facility
 - vi. Are required around and near floor openings and leading edges in a non-operating/occupied facility

SECTION 2.20: CARS, PICKUPS, TRUCKS, INDUSTRIAL VEHICLES, GOLF CARTS, ALL OTHER POWERED VEHICLES

1. The operator must possess a valid driver's license.
2. All golf carts shall be equipped with reflectors, headlights and an orange safety flag (off road vehicle marker). The flag will be mounted on a 6-foot rod, at a minimum.
3. In vehicles without turn signals, hand signals shall be used to relay turns.
4. All vehicles will utilize one of the following when backing up: a back-up alarm, a horn or a spotter. Operators will obey all speed limit requirements.
5. Company name and unique I.D. (number or name on cart) shall be displayed on all golf carts.
6. Wheels shall be chocked using approved restraining devices when vehicle is being loaded or unloaded using a powered industrial truck or manual material handling equipment.
7. Golf Carts may be used on campus roads or pathways and are not to be used on public roadways or sidewalks. Vehicles shall be restricted to parking only in the areas designated by the site logistics team.
8. All vehicles shall be operated in accordance with the manufacturer's recommendation, which includes vehicle occupancy, that is, each person shall have a seat.

9. Vehicles shall not be modified in any manner that affects the recommended mode of operation, speed, or safety of the vehicle.
10. All vehicles shall be regularly inspected for maintenance and kept in good working order according to manufacturer's recommendation.
11. Smoking is not allowed in any powered work vehicle (PWV) while on-site. Smoking is allowed only in designated areas/smoking shelters.
12. Charging station for battery powered vehicles must be established per site EHS requirements.
13. Pedestrians have the right of way. Drivers must yield to pedestrian traffic.
14. Seat belts are to be provided in vehicles designed to transport personnel. Driver and passengers are to wear safety/seat belts.
15. Obey all speed limit and regulatory signs.
16. Shut off engine to fuel and use secondary containment pan while fueling to prevent spills to environment.
17. Inspect vehicle before each and every use.
18. Mount or dismount only when vehicle is stopped.
19. Keep all body parts inside the vehicle.
20. Personnel must not ride in the bed of any vehicle at any time.
21. No more than 3 people will ride in the front seat of any vehicle.
22. In trucks without overhead protection, the drivers must dismount from the cab and remain clear while the truck is being loaded by power equipment.
23. Golf Carts will be equipped with operable horns as a warning device.
24. Engines will be shut off and parking brakes set in all vehicles left unattended (out of sight or > 20 feet).
25. Vehicles will be pulled to the side of the road and stopped when using a hand held phone or radio.
26. Secure or cover all loads to prevent movement.

SECTION 2:21: OVERHEAD WORK

1. Create a temporary construction/hard hat zone below work activity.
2. Post overhead hazard warning signs and barricade the area.
3. All tools or devices not in use or directly over safety/debris netting are to be stored or carried in tool belts or buckets.

4. All containers used for capturing and/or transporting liquids must be equipped with lids. Lids must remain in place when not in use.
5. Use debris mats to catch particles, small parts, screws, nuts, etc. The mats will be vacuumed and picked up when the work is completed or daily if the work will continue.
6. Temporary covers, tool/equipment lanyards, or additional measures shall be taken to prevent objects falling from overhead.
7. Remove all materials, equipment, signage, and barricades when the work is complete.

SECTION 2.22: PERSONAL PROTECTIVE EQUIPMENT (PPE)

1. Contractors and their workers must come to an Intel site with PPE as required to safely perform their work. At a minimum, all workers must be supplied by their employer (Contractor) with an approved hard-hat, approved safety glasses, and sturdy work shoes/boots.
2. All contractors must ensure that their workers have received training on the proper use, inspection, storage and care for all PPE as required for their work. As with all training, proof of training will be maintained and made available to Intel upon request.
3. Head and Scalp
 - a. Employees working in areas where there is a possible danger of head injury from impact, or from falling or flying objects, or from electrical shock and burns, shall be protected by protective helmets.
 - b. Hardhats are to be worn in all construction areas unless otherwise communicated or posted. No class C or metallic hardhats are allowed on Intel sites.
 - c. Before each use, hardhats must be inspected for cracks, signs of impact or rough treatment and wear that might reduce the degree of safety originally provided. If signs of excess wear exist, it must be discarded.
 - d. Hardhat suspensions must never be altered.
 - e. Hardhats are to be worn with the bill to the front (not backwards).
 - f. If face protection (face shields) are required to be worn in addition to head protection, face shields must be provided that can be worn with the worker's hardhat.
 - g. Objects will not be placed or stored between the hardhat shell and suspension.
 - h. Baseball type hats with the button on top will not be worn under a hardhat.
4. Eye and Face
 - a. Prior to work in any area with potential exposure to hazardous materials/chemicals, the nearest eyewash will be identified and communicated to all.
 - b. All contractors and their workers must wear approved eye protection at all times on Intel sites unless otherwise communicated or posted.
 - c. Special eye hazard work areas (such as welding, torch work, etc.) will be identified in pre-task plans and appropriate eye protection provided.
 - d. Goggles will be worn if the potential for fine particles or chemical hazards exists. Goggles will also be worn for overhead protection from particles/dust.
 - e. Tinted eye protection is not allowed inside facilities/structures unless specifically required and approved by Intel project management.
 - f. Visitors to the site that do not have approved eyewear must be provided approved goggles or glasses.
 - g. ANSI approved eye wear will be worn over prescription glasses for access to site work areas until permanent protective eyewear can be obtained.
 - h. Face shields must be worn when grinding and handling acids or molten materials.

5. Body

- a. Where chemical hazards (corrosives, etc.) are present, appropriate protection will be provided. The protection provided must be chosen to be resistant to the hazards and chemical properties as presented by the work. Reusable clothing must be decontaminated prior to storage.
- b. For hazard specific protection, such as for protection for electrical hazards, refer to the appropriate procedure as provided in this manual.
- c. When welding, the neck and face will be suitably protected from arc burns.
- d. For all construction sites, workers must be required to wear long pants and shirts with sleeves. Project management will approve exceptions.

6. Hand

- a. Protective gloves may be worn for hand protection in the clean rooms when hands are *exposed to hazards described by this procedure. Clean Room Protocol must be contacted to review glove selection for work performed within the clean room.*
 - i. The minimum cut rating for cut resistant gloves shall be ANSI Level III.
- b. Different exposures require the use of different types of gloves. Evaluate each situation to ensure which is the appropriate type of hand protection to use.

Task	Appropriate Glove
Energized Electrical Work (EEW):	Rated rubber gloves with leather protectors
Welding operations:	Gauntlet type leather welding gloves
Grinding operations:	Tight fitting leather gloves
Sharp edges and metal burrs:	Cut-resistant gloves
Utility knives:	Cut-resistant gloves
Concrete work:	Rubber or leather gloves
Petroleum products:	Chemical resistant gloves per the MSDS
Hazardous materials (solvents, paints, adhesives, etc.):	Chemical resistant gloves per the MSDS
Working around machinery:	Tight fitting leather gloves should be utilized when hand protection is necessary around rotating equipment to prevent entanglement of gloves/hands in machinery

7. Legs, Thighs, Knees, Shins, and Ankles

- a. Overalls or pants must not have loose, torn or dragging fabric.
- b. Pointed tools will not be carried in pockets. A canvas or leather tool sheath hung from the belt is acceptable--Remember: All Points Down.
- c. Shorts are not allowed in construction areas.

8. Feet and Toes

- a. All personnel must wear sturdy, non-porous work shoes/boots unless otherwise documented and/or posted.
- b. For personnel required to repetitively handle loads in excess of 25 pounds, safety-toed safety boots/shoes are required.
- c. All personnel conducting tamping and air hammering processes will wear metatarsal and safety-toed guards.
- d. The use of safety-toed (safety shoes/boots) and/or metatarsal guards will be defined in the project plan or PTP.

9. Hearing

- a. Contractor must ensure that any worker exposed to 85 dBA (eight-hour TWA) will be enrolled in a Hearing Conservation Program.

10. Respiratory Protection

- a. A respirator shall be provided to each employee by their employer when such equipment is necessary to protect the health of such employee. The employer shall provide the respirators which are applicable and suitable for the purpose intended. The employer shall be responsible for the establishment and maintenance of a respiratory protection program.
- b. Each Contractor company is responsible for design and implementation of a Respiratory Protection program when its employees will be using respirators. Elements of the program should include; risk/hazard analysis, selection of appropriate respirators, medical evaluation of respirator wearers, training, and fit testing. Training records shall be made available at the request of Intel project management.
- c. The Contractor is responsible for determining when and where respiratory protection is required to address hazards that are generated as a result of Contractor activity on either new construction or sustaining contractor projects.
- d. If Respiratory Protection is required as a result of hazards presented by Intel Operations the Contractor will work with Intel EHS to identify the appropriate respiratory protective equipment.
- e. All respiratory protection equipment used on Intel sites shall be NIOSH approved.
- f. Respirators shall not be shared. Each employee requiring protection shall be issued equipment unless the Contractor has a formal cleaning/disinfecting program in place.
- g. Anyone wearing a respirator shall be clean-shaven to ensure a secure face/respirator seal.

SECTION 2.23: POWDER ACTUATED TOOLS

1. All Intel contractors are required to follow the OSHA or any other country specific law and regulations related to powder actuated tools.
2. All powder-activated tools must be approved by Intel/GC/CM prior to use on Intel property. Powder activated tools are prohibited in Intel occupied buildings. Approval may be given on a case-by-case basis by project management.
3. Workers must be trained and certified to operate a powder actuated tool.
4. Tools will not be used in an explosive or flammable atmosphere.
5. The tool must be inspected each day before loading to insure that all safety devices are in good working condition
6. Tools will not be loaded until just prior to the intended firing time. Loaded tools will not be left unattended. Firing of the tool shall be by at least two separate and distinct actions (dual activation)
7. When firing into concrete a concrete surface, the depth must be a minimum of 3 times greater than the length of the fastener.
8. Precautions shall be taken to ensure that the affected area is sufficiently barricaded off with danger tape and employees are aware of the activity. A clear perimeter should be designated based on manufacturer's recommendations.
9. Sufficient notification shall be given to building occupants to inform them of any potential noise or pedestrian traffic diversions caused by the work.

10. Sufficient personal protective equipment shall be worn including required eye protection, face shields, hearing protection and hand protection. Check the manufacturer's recommendations for guidance. At a minimum face shield, eye protection and hearing protection should be utilized.
11. Misfired cartridges must be segregated from fired cartridges and disposed of per manufacturer's recommendations.
12. Fired cartridges will be disposed of properly and not allowed to accumulate on the floor or in the work area.
13. Tools will not be greater than .22 caliber.

SECTION 2.24 POWERED EQUIPMENT AND HAND TOOLS

1. All tools and equipment will be maintained in good working condition and have current certificates as required by law.
2. Contractor equipment will be inspected prior to use. Formal, documented inspections of all tools are required on a monthly basis. Copies of inspections must be made available to Intel when requested.
3. Any tool or equipment that is found not to be in safe working condition must immediately tagged out of service
4. Determine and use the right tool for the job.
5. Use only the tools that you have been trained to use.
6. Tools and equipment must be disconnected whenever the equipment is involved in maintenance, even to change a blade on a saw. If this is not possible then lock-out / tag-out procedure must be put into effect.
7. If equipment is owned by Intel, but borrowed and used by contractors, contractors are responsible to keep and maintain equipment in safe working order.
8. Personal Protective Equipment (PPE) will be defined for use with each class or type of powered equipment and/or tool and provided for use.
9. Stationary tools or grinding machines will be securely mounted to prevent movement and/or injury.
10. Make sure impact/work surfaces of tools are properly maintained.
11. All portable electrically powered tools need to be grounded or double insulated with GFCI protection to prevent electrical shock.
12. Grand Fault Circuit Interrupter (GFCI) program will be in place for all construction power use.
13. Insulated tools are required to be non-conductive for electrical work or where the potential for contact with live electrical components exists.
14. Never lift or carry a power tool by its cord.

15. Multiple Outlet devices (Powerstrip) / Extension cords:
 - a. All multiple devices and extension cords must be properly grounded when connected to a power source. Multiple outlet devices must be rated for at least 20 amps and have GFCI.
 - b. Extension cords shall be rated for the maximum anticipated electrical load.
 - c. Multiple outlet devices must only be used at the terminus of the cord. The use of multiple outlet devices for the purpose of daisy chaining (the practice of connecting multiple extension cords to multiple outlet devices) extension cords is not allowed.
16. Pocket knife / Leatherman / Utility knife shall not be used for stripping wire.
17. Multipurpose tools (e.g. Leathermen™) shall not be used on Intel projects.
18. Guards and safety switches will not be removed or made inoperative.
19. Grinding disks and wheels will be checked to verify they are correct for the grinder and speed being used.
20. All fuel powered tools shall be stopped while being refueled, serviced, or maintained.
21. Make sure the tool handle is properly maintained and free from damage (splintered or cracked).
22. Impact tools such as chisels, wedges, etc. are not have mushroomed heads.
23. Reciprocating saw (Sawzall) procedure:
 - a. Remove all material that does not have to be cut in place.
 - b. All systems at risk require protection and approval from owner/s.
 - c. A Sawzall must be the tool of last resort.
 - d. In order to use a Sawzall a "YES" must be answered to the four questions below, answering "NO" to any question requires approval from the SIPP team.
 - i. Have you attached a drawing and dimensions of area/material to be cut?
 - ii. Have you fully identified the system to be cu
 - iii. Have you assessed risk at maximum stroke of blade?
 - iv. Is there full view of the area to be cut?
24. Tube Cutter, (Also known as Pipe Cutters, Conduit Cutters)
 - a. Restrictions for Use Under Electrical Scope of Work:
 - i. Tube Cutters shall not be used for the installation of conduit.
 - ii. Tube Cutters may be used for conduit demolition.
25. FACING TOOL: REQUIRED TO IMPLEMENT A COVER/GUARD TYPE MECHANISM WHICH PREVENTS CONTACT WITH THE POINT OF OPERATION DURING CLEANING IF THE POWER SWITCH WERE TO BE ACTIVATED:
26. ALL UTILITY KNIVES SHALL REQUIRE A SELF/AUTO-RETRACTING BLADE
27. DRILLS, GRINDERS AND OTHER ROTATING POWER EQUIPMENT SHALL HAVE AN ATTACHED HANDLE PER MANUFACTURERS RECOMMENDATIONS.

SECTION 2.25: SAFETY SHOWERS AND EYE WASHES

1. Know the location of the nearest safety shower before starting work.
2. If you have the need to use a safety shower or eye wash, flush with water until help arrives or a minimum of 15 minutes.

3. Safety showers and eye washes are for emergencies only.
4. Do not block the showers and eye washes.
5. Do not dispose of anything down the drains.
6. Report any accidental activation of showers and eye washes to security immediately. If necessary you may use an emergency phone.

SECTION 2.26: TRENCHING AND EXCAVATIONS

1. Reference Intel Corporate Environmental Health and Safety (EHS) Trenching and Excavation Standard on supplier.intel.com

SECTION 3 – FIRE PREVENTION

SECTION 3.1: GENERAL FIRE PREVENTION

1. Smoke only in designated areas. Extinguish matches tobacco products and place them in approved containers.
2. Minimize the amount of flammable liquids/gases in the work area to a single work shift supply.
3. Close containers of flammable liquids when not in use. Report spills and any indication of excessive flammable vapor/gas concentrations immediately.
4. Obtain the necessary permits when performing hot work or disabling fire protection systems.
5. Make sure materials and equipment do not block the access to extinguishers and fire protection hoses, hydrants, and standpipes.
6. Ensure materials are kept at least 18 inches (0.5 meter) from sprinkler heads.
7. Attempt to extinguish small fires (trash can size) only if trained to do so. If trained to extinguish fires, familiarize yourself with the location of fire extinguishers in the area.

SECTION 3.2: FIRE EXTINGUISHER REQUIREMENTS FOR ACTIVE CONSTRUCTION SITES

1. Active construction projects shall have portable fire extinguishers provided until the permanent building's fire extinguishers are installed.
2. Extinguishers shall be provided in buildings under construction once one of the following conditions exists:
 - a. a second story or roof has been installed – though not necessarily completed - over the foundation;
 - b. the exterior walls have been erected and closed in.
3. The portable fire extinguishers shall be dry or wet chemical, and shall be rated for Ordinary Hazard Occupancy.
4. Each portable fire extinguisher shall have a minimum 2A:20B:C rating, and shall be spaced on an interval not to exceed 3,000 square feet (280 square meters) per extinguisher.
5. Maximum travel distance to any fire extinguisher shall not exceed 100 feet (30.5 meters).
6. Transition to providing fire extinguishers at permanent locations and spacing is not necessary until the building/rooms are completed and meet room readiness requirements. All cabinets and mounting hardware for the permanent fire extinguishers shall be marked as 'not in operation' or equivalent, until the permanent extinguishers have been installed.

SECTION 3.3: HOT WORK PERMIT

1. A Non-Electrical Hot Work Permit and SIPP / CIPP (as specified by Intel or project site) are required any time work involves the use of open flame or spark producing equipment. This includes welding, cutting burning, grinding and or soldering operations.

2. Prior to commencing work, all work specific/area hazards must be understood and communicated and all appropriate permits will be obtained.
3. All appropriate permits will be posted in the area of the work.
4. All personnel in the surrounding work area must be properly warned of the hazardous work area by the use of barricades or other communication means.
5. Prior to work, within 35 feet (~ 11 meter) of work area:
 - a. Flammable liquids, dust lint and oily deposits are to be removed
 - b. Explosive atmosphere is eliminated or if not possible, monitored
 - c. Floors swept clean
 - d. Combustible floors wet down, combustibles in the area removed or covered with fire resistive protection
 - e. Floor and wall openings covered
 - f. Fire resistive tarpaulins suspended beneath work
6. A fire watch will be employed while Non-Electrical Hot Work is ongoing and for 60 minutes after with fire extinguishing equipment immediately available at the work area.
7. A fire watch must be present for one hour after completion of the work.
8. All fire watch personnel will be trained in the use of the fire protection equipment and fire watch duties.
9. Non-Electrical Hot Work will not be conducted in any area classified as a Class I, Division I or II area according to the current Uniform Fire Code. Contact your local safety representative or project manager for questions.

SECTION 3.4: FIRE SYSTEM WORK/RED TAG PROCESS

1. Obtain the proper permits and approvals before conducting work that could affect facility fire detection and suppression systems.
2. Permits must be closed after work is completed. Permits are ordinarily issued for one shift only, approval must be granted if work will extend beyond the shift in which the permit was issued. Permits may not be modified; new permits must be approved.
3. Participants in fire system work must be trained to the level of their responsibilities (i.e., buddy, fire watcher).
4. Everyone working in the impaired area must be briefed on the hazards present and precautions to be taken.
5. All available sprinklers, fire hose systems and extinguishers will be in service and operable.
6. Additional safety measures must be taken when hot work or energized electrical work is conducted in an area that has an impaired fire system.

SECTION 3.5: WELDING, CUTTING AND BRAZING

1. Protection of the eyes, face, neck, and hands is required during welding.
2. Only natural fiber clothing may be worn on the upper body extremities. A leather apron or full body leathers is recommended.

3. Respiratory protection is not required for most welding jobs if proper ventilation is provided.
4. Welding screens are required to protect adjacent workers from exposure to non-ionizing radiation. Adjacent workers are required to wear appropriate eye protection where screens are not feasible. Welder's assistants and those working inside the screened in area must wear appropriate eye protection.
5. When welding, cutting, burning, grinding, chipping, abrasive blasting, rivet busting, or otherwise disturbing painted or coated surfaces, a pre-assessment will be required to determine if the surfaces contain lead-based paint. If bulk sampling results for paint are positive for lead, OSHA Standard 29 CFR 1926.62 will be followed.
6. Chlorinated solvents are prohibited from use in or adjacent to all welding operations. Decomposition products such as phosgene can be formed as a result of the reaction of these solvent vapors with the radiation energy produced during welding operations.

SECTION 4 – INDUSTRIAL HYGIENE

SECTION 4.1: CONFINED SPACE

1. Reference Intel Corporate Environmental Health and Safety (EHS) Confined Space Entry Standard on supplier.intel.com
2. Each site may have unique criteria and/or processes defined to manage confined space entry. Prior to commencing work, each contractor will obtain the current site confined space entry written program and integrate its expectations into the project plan.
3. Contractors must ensure all confined spaces are identified and managed using documented project confined space management methods.

SECTION 4.2: CONSTRUCTION ERGONOMICS

1. Each contractor company is responsible for training all workers in using proper ergonomics practices on a construction site.
2. Each contractor company is responsible for insuring workers adhere to the ergonomics principles outlined in the training materials.
3. Each contractor company is responsible for ensuring there is a process in place to identify, communicate, and resolve ergonomics issues.
4. Each contractor company is responsible to ensure that ergonomics risk factors are identified and addressed as part of Risk Assessment / Method Statement and PTP process.
5. For support this program you can refer to Intel Supplier WEB site: BETE (Building Excellence through Ergonomics): <https://supplier.intel.com/static/EHS/BETE/betemain.htm>

SECTION 4.3: HAZARD COMMUNICATION

1. All Intel contractors have to follow the Hazard Communication standards and are responsible for ensuring that their workers and subcontractors receive Hazard Communication training prior to work at Intel sites. As with all required training, proof of training will be made available to Intel project management upon request.
2. All contractors working on Intel sites will have a written hazard communication program approved by Intel project management and in place as part of the project safety plan.
3. All hazardous materials brought onto Intel projects must be reviewed, and approved by Intel Project Management in accordance with the Construction EHS Minimum Performance Requirements document.
4. Contractor Material Safety Data Sheets (MSDS) for all hazardous materials required to complete the work scope will be present on site and made available to all workers (Intel and contractor). The location of the MSDS must be communicated to all employees as part of project orientation.
5. All MSDS must be in English and the primary language being spoken in the country where the work is occurring.

6. All hazardous materials must be labeled. Each container label must list the substance name, hazardous ingredients, hazard warnings and the manufacturer's name and address.
7. All chemicals before being brought on site, must receive prior approval from Intel's Construction EHS or Site EHS personnel.

SECTION 4.4: HEAT AND COLD STRESS MANAGEMENT

1. Cold Stress

- a. Workers will be trained in the signs/symptoms of cold stress. They will also be instructed on the precautionary measures to be taken to prevent cold stress and immediate first aid actions to be taken in the event of overexposure.
- b. Pain in the extremities is often the first sign of cold stress and shivering a second and more advanced sign; if either of these signs becomes noticeable seek shelter.
- c. Always wear warm dry clothing. If clothing becomes damp, dry clothes must be changed into immediately.
- d. Gloves will be worn in cold temperatures to prevent loss of manual dexterity that may contribute to injuries or incidents. The combined exposure to cold temperatures and vibrating tools must be avoided.
- e. For work in temperatures below 20° F (minus 7 Celsius) , heated shelters will be provided and work/rest regimens established.
- f. Cold stress prevention must be mentioned in toolbox talks and included in pre-task planning.

2. Heat Stress

- a. Workers will be trained in the signs/symptoms of heat stress. They will also be instructed on the precautionary measures to be taken to prevent heat stress and immediate first aid actions to be taken in the event of overexposure.
- b. Methods approved by the ACGIH (American Conference of Industrial Hygiene) or any other country regulatory body must be used to evaluate and control the heat stress load on workers. Factors include the Wet Bulb Globe Temperature (A composite temperature used to estimate the effect of temperature, humidity, wind speed, and solar radiations on humans) and the worker's work load, clothing, and health.
- c. Suitable work/rest regimens will be implemented. Cool/shaded areas will be designated as worker rest areas.
- d. Cool drinking water and sanitary drinking cups will be provided to workers.
- e. Ventilation in worker work areas must be evaluated. Portable fans should be considered in "still" areas.
- f. Heat stress prevention must be mentioned in tool box talks and included in pre-task planning. Labor-intensive tasks will be planned for early morning and late evening hours when temperatures are lowest.
- g. Workers who are unaccustomed to physically demanding work in hot environments must be monitored closely when starting challenging jobs.

SECTION 4.5: LASER SAFETY

1. At a minimum the use and inspection of lasers, both rotating and stationary, shall comply with: OSHA, ANSI or any other country specific regulation, and the manufacturer's recommendations and requirements.

2. Laser beam or reflected beam can cause injuries to the eyes and skin during use. No laser beam will be directed at any worker. Associated hazards such as electrical, noise, fire, and health should be considered. Lasers must not be left unattended during operation.
3. The owner's manual shall be kept with the equipment at all times, and shall be produced upon request.
4. Laser users shall be trained and certified for the class of laser he or she is using. Proof of qualification shall be maintained on the user, and shall be produced upon request.
5. Where Class II or more powerful lasers are used, appropriate laser warning placards shall be conspicuously posted on the equipment, and laser warning signs shall be posted in the area where the beam reaches/affects.
6. Where a certain model or class laser requires the use of a specific eye protection for protection against direct or reflected laser light, this operation shall be conducted only in an area where access is restricted to only the user(s), or shall be done off-hours.
7. Lasers must not be left unattended during operation. Beam shutters or caps will be utilized, or the laser turned off when laser transmission is not actually required.
8. A warning sign must be attached to equipment and in conspicuous locations indicating the potential eye hazard associated with the laser and warning against looking into the primary beam or reflections.
9. All potential electrical hazards must be safeguarded and procedures used.

SECTION 4.6: POTENTIAL EXPOSURE MONITORING

1. When there is potential or real exposure to chemical substances or physical agents like noise, radiation (ionizing and non ionizing) lasers, asbestos, silica particles and others at Intel sites, the contractor will:
 - a. Identify and plan for the possible hazard in the risk assessment/ JHA/method statement and pre-task plan and ensure a comprehensive mitigation plan is established.
 - b. Create and implement a worker exposure monitoring plan as necessary to ensure the safety of contractor's workers.
 - c. Implement notification and documentation procedures including notification written consent, results report, record retention and confidentiality.
2. Contractor agrees to immediately respond to exposure complaints from contractor's workers or other affected persons.
3. Contractor agrees to provide to Intel's medical direction within 24 hours of Intel's' formal request, a copy of any occupational medical information by a process that maintains the workers confidentiality.
4. Contractor agrees to allow Intel to perform periodic work area air monitoring during performance of work. Intel agrees to share the results of said monitoring as requested by affected company.
5. Contractor can request, in writing, support from Intel in classification and monitoring of work place exposure(s).

SECTION 4.7 SAFETY PERMITS

1. GC & CM & Subcontractors will submit work permits for review by CIPP / SIPP prior to start of work as required. Work permits or plans that are required include but not limited to:
 - a. Confined Space Entry
 - b. Hot Work / Open Flame Activities
 - c. Excavation and Trenching
 - d. Critical crane Lift Permit
 - e. Fall Protection Plan
 - f. Asbestos abatement activities
 - g. Dirty work permit
 - h. Roof Access permit
 - i. Odor producing activities
 - j. Lockout/Tagout Checklist
 - k. Energized Electrical work
 - l. Scaffold permits
 - m. Any Shutdown of LSS Monitoring, Security or Fire Protection System
 - n. Traffic change / Road / Side walk closure
 - o. Demolition / Tie In activities
 - p. Cutting process line or in adjacent to process line with snap cutter
 - q. Powder Actuated Tools
 - r. Other work plans as deemed necessary

SECTION 5 – ENVIRONMENTAL

SECTION 5.1 – AIR POLLUTION CONTROL PLAN

5.1.1. PURPOSE

The following defines the content and requirements for a site-specific Air Pollution Control Plan (APCP) for each construction project. The purpose of the written APCP is to set forth instructions and establish requirements to prevent or minimize air pollution associated with onsite construction or build-out activities. These requirements have been established to help comply with federal, state, and local laws as well as regulations, standards and requirements including Intel's Minimum Performance Standards (MPS) and policies. Where local or state regulations require more stringent or different controls, each project must incorporate those requirements into the APCP.

5.1.2 APPLICABILITY

The APCP applies to all contractors and their subcontractors. The General Contractor/Construction Manager is responsible for preparing the written APCP and for establishing systems with the site subcontractors to ensure communication and conformance to the requirements of the APCP.

Construction-related air pollution can be caused by dust, vapors, fumes, mist, gas, smoke, or odorous substances. The APCP is required to ensure this air pollution does not extend beyond the site property boundary in sufficient quantities and duration that exceed or contribute to exceeding government laws, regulations and standards or that cause deterioration of the "quality of life" in neighboring properties (e.g. nuisance).

The following are examples of construction related activities that potentially generate air pollution:

- Site preparation and civil engineering work (e.g., grubbing, clearing, scraping, excavating, piling and filling) that can produce dust or emissions
- Vehicular traffic dust from exposed earth and gravel surfaces
- Soil treatment with lime, pesticides, fungicides, dust suppressants or fertilizers
- Surface preparation and coating that can create dust, vapors or spray from sand/bead blasting, painting, epoxy coating, hot tar roofing, and asphalt paving
- Mobile equipment that generates dust, vapors and spray to include portable concrete batch plants, rock crushers, chippers, thermal treatment of debris and soils, tank vents and portable electrical generators.
- Demolition activities that can create dust, asbestos or lead during removal of buildings, structures, pipes and tanks.

5.1.3 COMMUNICATION AND PLANNING

The following is a brief summary of the key elements, organized by construction activity that must be addressed or otherwise included in each APCP. Appendices D through I are checklists that can assist in-field checklists to ensure compliance with this plan. The APCP must be available for inspection at all times or provided to Intel's Construction EHS or Site EHS personnel.

5.1.3.1 SITE PREPARATION AND VEHICULAR TRAFFIC

Many local jurisdictions require that a dust control plan be prepared and submitted for approval prior to beginning site preparation or earthwork. In some jurisdictions, specifically in the U.S., a

dust control permit must be obtained prior to commencement of work and in other cases a building permit will not be issued unless a dust control plan has been prepared and submitted. Whether required by the local jurisdiction or not, the General Contractor/Construction Manager shall either prepare a dust control plan or obtain a copy of the plan from the earthwork subcontractor prior to beginning construction. The dust control plan must be included in the site-specific APCP.

The dust control plan must include, at a minimum:

- Criteria and frequency for applying water to potentially dusty areas of the site subject to vehicular traffic (e.g., access roads, internal site roads, areas disturbed by heavy earth moving equipment, etc.).
- A log that specifies the location, the time(s) of day, number of times per day and amount of water to be applied per day to each location. The log is to be filled out by the driver of the watering truck and remain onsite at all times for inspection.
- Provisions for determining when additional dust control is necessary (e.g., windy days, increased traffic, newly exposed soil, etc.).
- Areas that require the placement of aggregate to keep dust down (e.g., heavily traveled roads, equipment staging areas, etc.)
- Copies of permits required by local agencies for on-site water storage. (Some water storage arrangements (e.g., surface impoundments) require significant permitting lead time or are disallowed by local agencies.)

NOTE: NEVER use dust suppression chemicals (including oil) without Intel Construction EHS or Site EHS personnel prior approval.

All dust control plans and permits must be provided to Intel's onsite Construction EHS or Site EHS personnel or otherwise available for inspection at all times.

See Appendix D for Site Planning Activities Checklist and Appendix E for Area Water Application Log Sheet

5.1.3.2 APPLICATION OF CHEMICALS TO THE SOILS

Chemicals are often applied to the surface of soils for purposes of stabilization / moisture control (lime), sterilization (pesticides, fungicides) or to support landscape plantings. Site specific approvals / permits are not required by local jurisdictions, however there may be local restrictions prohibiting the use of certain chemicals because of the site's proximity to sensitive receptors (e.g., employees, residents, local creeks, lakes, estuaries, wetlands or protected flora or fauna, etc.)

Key elements to consider before purchasing or applying chemicals to the soil/ground are:

- Has Intel's Construction EHS or Site EHS approved the chemical prior to the chemical arriving on the project site? If no, the chemical must not be on Intel property. There are no exceptions and violations of this rule can lead to an immediate work-stop order and project delays as well as employee/chemical removal from the project site. (Refer to Intel's process under Sec. 5.2 Hazardous Materials Control Plan).
- Are workers trained and licensed to apply the chemicals? Certain chemicals can only be applied by trained and licensed/permitted individuals. The General Contractor/Construction Manager must obtain a copy of the required permits for each individual that will be applying any chemicals to the soil/ground.

- Are all licenses and permits included as part of the site-specific APCP? This information must be immediately available to Intel's Construction EHS or Site EHS. It must be included in the APCP which is available for review at all times or physically provided to Intel's Construction EHS or Site EHS.
- Are there any adverse conditions that can cause chemicals to leave the construction site and threaten sensitive receptors? For example, chemicals should never be applied while it is windy or raining. Chemicals should never be stockpiled and exposed to rain water or wind either.
- Chemicals should only be applied as specified by the manufacturer or as described in the site-specific APCP.

See Appendix F for Chemical Application Checklist

5.1.3.3 CONSTRUCTION MATERIAL SURFACE PREPARATION AND COATING

The construction of roads, buildings and other structures often requires the surfaces to be prepared prior to applying surface coatings. These activities, along with the surface coatings themselves, can result in the generation of air pollutants. In preparing the surfaces, sand or bead blasting is often used, which generates aggregate and metal dust particles. The application of surface coatings (e.g., epoxy coatings, paint, hot tar roofing and asphalt paving materials, etc.) can generate fumes, vapors and strong odors. The APCP must address these activities.

Key elements associated with these activities include:

- Intel pre-approval for all material/chemical (see Chemical Approval process under Sec. 5.2 Hazardous Materials Control Plan) to be used for bead and sand blasting, for coating or painting, and for any solvents associated with these activities prior to any of these materials arriving on the project site.
- Dust or particulate suppression control for all bead/sand blasting and spray painting activities to prevent material from traveling beyond the immediate work area. Sheeting material should be used to separate the work area from the rest of the site.
- Surface preparation and coating activities performed outdoors should not be performed during windy conditions unless performed within enclosed, protected areas. Precautions must be taken to ensure that dust, particulate and other air-borne pollutants never impact sensitive receptors (e.g., employees, residents, local creeks, lakes, estuaries, wetlands or protected flora or fauna, etc.).
- Waste produced by surface preparation and coating activities must be taken to the site hazardous waste accumulation area for Intel to profile and define disposal options. At no time can chemical waste or other potentially contaminated waste materials be transported off-site without Intel's Construction EHS or Site EHS written approval.

See Appendix G for Surface Preparation and Coating Checklist

5.1.3.4 MOBILE EQUIPMENT

Mobile construction equipment can generate a significant amount of air pollution. Typical mobile equipment that is used on a construction site includes portable concrete batch plants, rock crushers, thermal treatment of debris or soils, portable petroleum tanks, and diesel-powered electric generators. Although there is little that can be done to control exhaust from the internal combustion engines, there are actions that must be taken related to certain mobile equipment. These actions must be defined in the site-specific APCP.

Key elements associated with these activities include the following:

- In most cases mobile equipment must have permits to operate from either the state or local agency responsible for the air pollution control program. The General Contractor/Construction Manager must obtain a copy of the permit(s) from the subcontractor prior to allowing the subcontractor to bring the equipment to the Intel project site.
- In cases where the subcontractor indicates permits are not required, the General Contractor/Construction Manager is to independently verify permit requirement by contacting Intel's Construction EHS or Site EHS personnel or if approved, the air pollution control agency to confirm that a permit is not required.
- The General Contractor/Construction Manager must confirm the subcontractor's compliance history prior to allowing work to proceed.
- If a portable concrete batch plant is to be brought on site, local and federal regulations and reporting requirements must be reviewed by Intel Construction EHS or Site EHS personnel prior to bringing equipment on site.
- All equipment should be located on the project site so as to minimize the potential for air pollutants from the equipment to travel beyond Intel property or otherwise impact sensitive receptors (e.g., employees, residents, local creeks, lakes, estuaries, wetlands or protected flora or fauna, etc.).
- For portable petroleum tanks, refer to the requirements of the Intel Construction Hazardous Material Control Plan.

NOTE: Thermal treatment units are not allowed on Intel construction sites.

See Appendix H for Mobile Equipment Setup Checklist

5.1.3.5 DEMOLITION

The demolition of buildings, tanks, piping systems, etc., can often result in the release of air pollutants. Depending on the age of the building, the materials of construction could contain asbestos or lead-based paint. Ductwork or pipes may contain residual chemicals of concern (e.g., arsenic, adhesives/coatings, solvent or petroleum vapors, etc.). Tanks may contain materials which can release vapors or pose a potential hazardous situation when being removed. All these considerations should be reviewed and comprehended in the site-specific APCP.

Key elements associated with all demolition activities include the following:

- State / local permits are usually required for demolition of asbestos-containing / coated structures, pipes and equipment, or for removal of underground fuel/chemical tanks. A certified asbestos removal contractor shall be used for any asbestos removal activity. All permits and licenses must be included in the APCP and available for inspection at all times.
- Sand/Bead blasting of metal (interior / exterior) tanks, heavy equipment and steel structures generates spent abrasive material and residual rust and paint chips. The paint being removed may contain lead, requiring additional steps be taken to prevent the release of these materials or contact with any sensitive receptors (e.g., employees, residents, local creeks, lakes, estuaries, wetlands or protected flora or fauna, etc.). Prior to removal of any surface coating material, the General Contractor/Construction Manager and qualified subcontractors must determine if the materials contain lead or

other potentially harmful substance. This determination must be included in the site-specific APCP and available for inspection at all times.

- Prior to removal, dismantling, or disassembly of tanks, pipes, pumps or valves, they must be checked to verify that they contain no liquids, sludges or residues. These residues must be removed in accordance with government, owner, and contractor requirements prior to demolition.
- Demolition of any tool, equipment or construction materials that had previously come in contact with ANY CHEMICAL must be performed in strict accordance with Intel's demolition and decon procedures referred to as the "6D Decon Process".
- All waste must be profiled and managed for disposal under Intel EHS Construction or Site EHS direction

See Appendix I for Demolition Operations Checklist

SECTION 5.2 – HAZARDOUS MATERIAL CONTROL PLAN

5.2.1 Purpose

The purpose of the Hazardous Material Control Plan is to establish criteria for the management of hazardous materials, provide guidance for the establishment of hazardous materials communication, establish standards for the procurement and management of hazardous materials, and to provide assessment tools for the General Contractor/Construction Manager, construction manager, and subcontractors to use in verifying compliance with Intel's minimum performance standards (MPS); corporate requirements, project and site specific Intel standards and requirements, as well as provide assistance for complying with applicable federal, state, and local hazardous materials regulations.

5.2.2 Applicability and Goals

The Hazardous Material Control Plan applies to all construction management staff, General Contractor/Construction Managers and their subcontractors involved in the transportation, handling, accumulation and disposal of hazardous material on the Intel site.

The General Contractor/Construction Manager will establish a control plan for managing hazardous materials. The goal of the plan is to:

- Ensure the contractor and subcontractors identify each hazardous material to be used on the Intel site by type, quantity and duration of use.
- Ensure adequate facilities are established for the storage of hazardous materials prior to their arrival on the Intel site.
- Ensure the contractor and subcontractors have identified and understand both use and contingency requirements for hazardous materials to be brought on site.
- Ensure the contractor and subcontractors identify and implements the training required for the handling and disposal of hazardous materials.
- Ensure the contractor and subcontractors obtain appropriate approval for those hazardous materials to be used at the site prior to their arrival on site.
- Ensure that chemicals that are brought on site are reviewed and verified for legality of usage.

5.2.3 Definitions

The following types of materials are considered hazardous materials and fall under the requirements of this document:

Any substance or mixture of substances which is:

- Toxic
- Corrosive
- An irritant
- A strong sensitizer
- Pyrophoric, flammable, ignitable or combustible
- Radioactive
- Explosive
- Reactive
- Generates pressure through decomposition, heat or other means
- Any substance or mixture of substances that may cause personnel injury or illness during or as a proximate result of any customary or reasonable foreseeable handling or use, and
- Any substance or mixture of substances that is defined or regulated by any applicable EHS laws as hazardous, including, but not limited to, hazardous substances, hazardous materials, toxic substances, hazardous wastes, carcinogens, reproductive toxins and the like.

NOTE: For hazardous wastes also refer to the Intel Construction Hazardous Waste Management Plan for additional requirements.

Examples of hazardous materials include, but are not limited to:

- Adhesives
- Paints and thinners (e.g., mineral spirits)
- Solvents (e.g., isopropyl alcohol, acetone)
- Asphalts, tar sealants and coatings
- Lead (e.g., piping and solders)
- Landscaping pesticides and herbicides (weed killers)
- Petroleum products (e.g., gasoline, diesel, motor and lube oils, and greases)
- Acids and caustics
- Refrigerants and coolants (e.g., Freon)
- Trisodium phosphate (used in DI pipe cleaning)
- Hydrogen peroxide (used in DI pipe sterilization)
- Water treatment chemicals for cooling towers and closed loops

In Addition to the above materials, the following building materials (not an inclusive list) may also considered hazardous materials due to their potential to contain asbestos.

INSULATION:

- Blown-in insulation
- Boiler/tank insulation
- Breaching insulation
- Electrical wiring insulation
- Fireproofing
- Furnace insulation
- HVAC duct insulation
- Paper on backside of fiberglass insulation
- Pipe insulation/fittings
- Sink insulation

- Spray-applied insulation

INTERIOR BUILDING MATERIALS AND SYSTEMS

- Acoustical ceiling texture (“popcorn”)
- Asphalt flooring
- Base flashing
- Ceiling tiles/panels/mastic
- Chalkboards
- Construction mastics (e.g. mirror)
- Duct tape/paper
- Ductwork flexible connections
- Electrical cloth
- Electrical panel partitions
- Elevator brake shoes
- Fire blankets
- Fire curtains/hose
- Fire doors
- High temperature gaskets
- Incandescent light fixture backing
- Joint compound/wallboard
- Laboratory hoods/table tops
- Laboratory fume hood
- Mudded pipe elbow insulation
- Packing materials
- Paper fire box in walls
- Plaster/ wall joints
- Poured flooring
- Sub flooring slip sheet
- Textured paints/coatings
- Vapor barrier
- Vinyl floor tile/mastic
- Vinyl sheet flooring/mastic
- Vinyl wall coverings
- Window glazing

EXTERIOR BUILDING MATERIALS:

- Brick mortar
- Built-up roofing
- Caulking/putties
- Cement board/transite
- Cement pipes
- Cement roofing shingles
- Gray roofing paint
- Nicolet (white) roofing paper
- Rolled/hot mopped roofing
- Roofing materials/mastic/sealants
- Stucco

Note: This list does not include every product that may contain asbestos. It is intended as a general guide to show which types of materials may contain asbestos.

5.2.4 Communication and Training

The General Contractor/Construction Manager is responsible for establishing and maintaining a Hazard Communication program which includes a communication program for the contractor and subcontractor employees. Contractor/subcontractor companies will be responsible for the development, implementation and documentation of training in accordance with applicable federal, state and local statutes, regulations and requirements based on those hazardous materials that will be used on Intel's site. This training will be provided to the contractor / subcontractor's employees that are required to be exposed to, or work around those hazardous materials. This hazard Communication program will also include provisions for access to Material Safety Data Sheets (MSDS) for each contractor employee.

The documentation of training materials and implementation will be available to Intel for monitoring and auditing of the contractor / subcontractor's performance and compliance with the Hazardous Materials Control Plan.

5.2.5 Bid Preparation and Award

Controls have been established within the bid preparation process to ensure the following:

- Contractors/Subcontractors are aware of Intel's requirements for receiving, storing, handling and disposing of hazardous materials.
- Contractors/subcontractors provide the material and manpower requirements for complying with the Hazardous Materials Control Plan. This includes the contingency planning requirements to be met by the contractor/subcontractor in the event of a spill or release of hazardous materials.
- Contractors/subcontractors possess the expertise to comply with the Hazardous Material Control Plan.

Controls have been established following award of a purchase order to a successful bidder to:

- Provide the contractor/subcontractor with a listing of chemicals that are prohibited from the Intel site. This is done to ensure when selecting materials for use, appropriate authorization is obtained prior to shipping hazardous material to the site.

5.2.6 Chemical Approval

The General Contractor/Construction Manager is responsible for establishing a process which ensures contractor and subcontractor chemicals are approved by Intel Construction EHS or Site EHS personnel prior to being purchased or otherwise brought to an Intel facility. A chemical, its estimated quantity, and its use must be approved prior to delivery and use of the substance. The General Contractor/Construction Manager will coordinate the approval requests with the designated Intel Construction EHS or Site EHS representative. These requests will consist of a description of the chemical's quantity and intended use, and will be accompanied by a MSDS. Appendix J contains a sample Chemical Use Request Form

While certain chemicals and uses may not be approved due to site specific regulation or conditions, the following substances are prohibited for use at Intel facilities.

- Asbestos or asbestos containing construction materials, including, but not limited to, asbestos containing insulation, ceiling tiles, floor tiles, cement, adhesives and fire prevention materials.
- Polychlorinated biphenyls (PCBs), including, but not limited to PCB containing transformers, light ballast's, heat transfer fluids.
- Class I or Class II ozone depleting substances as defined by 40 CFR § 82, Appendix A and appendix B to Subpart A.
- Glass fiber reinforced plastic (FRP) that contains antimony trioxide.
- Carcinogens as identified by:
 - United States, National Toxicology Program (NTP), "Annual Report on Carcinogens" (latest edition).

- International Agency for Research on Cancer (IARC) Monographs (latest edition), or
- Title 29, Code of Federal Regulation, Part 1910, Subpart Z, Toxic and Hazardous Substances, U.S. Occupational Safety and Health Administration.
- Ethylene based glycol ethers
- Arsine
- Pb-based paints

On a monthly basis the contractor will supply to Intel a list of products purchased that contain a VOC solvent as defined by the Clean Air Act, and must include the following information for each product.

- Product Name;
- SDS;
- Location of storage;
- Type of storage container; and
- Purchase quantity.

Intel EHS must be notified in writing of all hazardous materials brought on-site that have a Hazardous Materials Information System (HMIS) rating greater than 2 or in excess of 55 gallons (208 liters)

The contractors will develop a procedure for obtaining approval from the Intel site Environmental Engineer prior to generating a hazardous waste. This will facilitate waste characterizations and shipments offsite.

NOTE: Refer to Intel's Chemical Use Policy for other banned chemicals and chemicals with use restrictions and bans.

5.2.7 Material Shipping/Receipt

The General Contractor/Construction Manager is responsible for establishing a process for ensuring that only approved chemicals are received on site, that chemical containers are in acceptable condition, and receiving facilities are adequate safely storing chemicals which may not be compatible for adjacent or proximate placement. Specifically, chemical should be evaluated for the following upon receipt:

- Verification that the chemical has been approved
- Chemical containers are not leaking or damaged.
- Labeling is intact
- Incompatible materials are stored separately

If any of the verifications or inspections are unsatisfactory, the shipment will not be allowed to remain on the site. The contractor / subcontractor will be responsible for contacting the shipment supplier to resolve discrepancies, prior to accepting the shipment.

For assistance in evaluating receipt of chemicals, a hazardous material receipt checklist is included as Appendix K.

5.2.8 Hazardous Material Storage Area Criteria

Contractors / subcontractors and construction managers requiring the use of hazardous materials for construction / build-out activities will be responsible for the shipping of the materials and approved chemicals to the Intel site. The General Contractor/Construction Manager is responsible for ensuring that appropriate areas are established for storage of these materials. Specifically, chemical storage areas should meet the following criteria:

- The material shall be clearly labeled to identify the hazardous materials.

- The area shall be appropriately labeled with material stored within the area, the name of the individual responsible for the hazardous materials within the area, and a 24-hour contact phone number for the individual responsible for the hazardous materials.
- The storage area requirements will be based on the materials being stored. If the hazardous materials to be stored are to be left in a roped off and posted area, this area should be constructed to ensure inadvertent access to the materials is controlled and all of the hazardous material is contained within the area. This shall require lining the area if materials could leak or be leached in the ground under the storage area.
- The area should be organized to provide unobstructed access and egress within the hazardous material storage area.
- If multiple types of hazardous materials are to be stored, the area should be of sufficient size and configuration to ensure no incompatible materials are stored adjacent to each other and sufficient distance is provided between such materials to ensure the safety of both personnel within the area and those materials within the area.
- Storage of liquids will occur in areas with secondary containment structures designed to contain at least 110% of the largest single container within the storage area. Appropriate provisions, such as chemical containment cabinets, should be made for combined storage of small quantities of compatible chemicals.
- The storage area should be labeled with the appropriate NFPA labels and signs and requirements set forth by local regulations.
- Dispensing / container refilling areas should be equipped with drip containment pans.
- Personnel responsible for management of the chemical areas should receive training which includes the specific hazards of materials stored within the areas, proper response to releases or spills, and appropriate labeling for any dispensed or repackaged substances.

Temporary Point-of-Use Storage Areas

All hazardous materials that are used must be controlled by the individual user(s). When those materials are left unattended at the job area, the following minimum requirements shall be met:

- The material shall be clearly labeled to identify the hazardous materials.
- The area shall be appropriately labeled with material stored within the area, the name of the individual responsible for the hazardous materials within the area, and a 24-hour contact phone number for the individual responsible for the hazardous materials.
- The storage area requirements will be based on the materials being stored. An example of this would be an approved paint cabinet or other purpose built cabinet for the storage of flammable materials. If the hazardous materials to be stored are to be left in a roped off and posted area, this area should be constructed to ensure inadvertent access to the materials is controlled and all of the hazardous material is contained within the area. This may require lining the area if materials could leak or be leached in the ground under the storage area.

The General Contractor/Construction Manager is responsible for implementing a contingency planning process for each of the chemical storage areas. This process may result in periodic inspections, as well as maintaining adequate spill response material readily available at the storage areas.

To prevent an excessive risk of release or spills of material, large quantities of chemical should not be stored. Less than a thirty day supply of hazardous materials should be maintained on site at any time.

Appendix L, Hazardous Material Storage Checklist, is included for reference.

5.2.9 Material Use

The transportation, temporary storage and use of hazardous material will be performed in accordance with approved work plans and applicable permits. Permits that may apply to the use of hazardous materials include but are not limited to Odorous Work Permits, Confined Space Entry Permits and Dirty Work Permits (in clean room areas).

Personnel and environmental safety controls may be required for handling and use of hazardous materials. The contractor / subcontractor will have documented procedures for the transportation, use and disposal of hazardous materials. These procedures will include the following control measures, where applicable:

- Personnel training requirements
- Personal protective equipment (PPE) requirements,
- Monitoring requirements,
- Spill prevention measures,
- Fire protection measures,
- Establishment of barriers / safe working distances for other employees not directly involved in the use of hazardous materials,
- Inventory control and reporting measures, and
- Contingency planning in the event of a spill, leak or release of hazardous materials.

If construction activities require repackaging chemicals into containers other than the original container, the contents of the new container will be clearly labeled with the chemical name and hazards listed on the new container.

5.2.10 Material Disposal

Intel has implemented aggressive waste reduction and recycling programs. Contractors / subcontractors and construction managers working at Intel sites are required to participate in these programs. Disposal of hazardous waste materials is discussed in detail in the Hazardous Waste Guideline prepared for construction activities and that guidance outlines detailed steps required for properly managing waste materials. Management controls, however, are required to minimize the amount of waste material generated by using only those materials required to perform the intended work. Unused hazardous material that can be reused should be returned to storage for reuse or recycled.

Empty containers used for the storage or transportation of hazardous materials will be properly positioned and disposed of as appropriate. Containers are not considered empty unless:

- All material that can be removed by normal means (pouring, etc.) has been removed
- Less than 1" of material remains in the container, or
- Less than 3% of the container capacity remains if the container is less than 110 gallons
- Less than 0.3% of the container capacity remains if the container is greater than 110 gallons.

Those waste materials that fall under the classification of a regulated Waste will be handled in accordance with the requirements of the Hazardous Waste Management Program. The General Contractor/Construction Manager will arrange disposal of hazardous wastes through Intel Construction EHS or Site EHS personnel. Shipments of hazardous waste without coordination through Intel Construction EHS or Site EHS personnel are strictly forbidden.

Hazardous Waste Management: The GC must provide to Intel a plan documenting the following:

Work with Intel EHS to develop hazardous waste determinations for chemical waste to be generated this includes, chemical contaminated tools, lights, batteries, chemical debris, used oil, petroleum contaminated soils, spent solvents etc;

Describe method to properly collect, identify, and label Hazardous and Chemical Wastes;
Provide proof of RCRA or other legally specified training for those managing/handling hazardous waste;
Describe and implement a plan to manage the hazardous waste, inclusive of a 90 day area if the quantities are greater than 55 gallons per week. This will include weekly inspections, double containment, etc;
Identify the disposal plan, including removal of Hazardous Materials brought on-site by Contractor.
All chemical waste generated at Intel must be managed by Intel-authorized suppliers or directly by Intel at the direction of Intel EHS.

Appendix M, Hazardous Material Disposal Checklist, is included for reference.

5.2.11 Auditing

Audit programs have been established to assist the General Contractor/Construction Manager in evaluating their operations to ensure the control of hazardous materials and compliance with the requirements and intent of this plan. Audits checklists are included in Appendices E through H as a reference. Intel reserves the right to audit any and all contractor operations on Intel property and to review all audit checklists and corrective action plans. All completed inspection checklists must be available for review upon request.

SECTION 5.3 – POLLUTION PREVENTION / ENVIRONMENTAL INCIDENT RESPONSE PLAN (PPEIRP)

5.3.1 PURPOSE

The purpose of this Pollution Prevention/Environmental Incident Response Plan (PPEIRP) is to provide guidance for procedures, methods, and equipment used to prevent the discharge of pollutants and hazardous substances into air, water, or soil, and to protect health and well being of personnel on site and the local community in the event of an incident. This guidance specifies the criteria upon which a site specific incident response plan should be based. These requirements have been established to assist in complying with: applicable federal laws, regulations, standards and requirements, Intel's minimum performance standards (MPS); and project and site specific Intel standards and requirements. Local or state regulations may require additional controls and project staff should review and include local requirements in this plan as appropriate.

This document is also intended to serve as a training reference for Emergency Coordinators and Emergency Response Teams.

5.3.2 APPLICABILITY

The PPEIRP applies to all contractors and their subcontractors involved in site development, construction, or build-out activities at the Intel site. It is the responsibility of the General Contractor/Construction Manager to prepare a site specific environmental incident plan based on an evaluation of hazardous materials present at the site and the anticipated release routes and scenarios. The General Contractor/Construction Manager will designate an Emergency Coordinator who will be responsible for coordinating environmental incidents and release response, as well as incident prevention planning activities and coordination of incident response among the subcontractors. Each contractor/subcontractor will be responsible for understanding their roles and responsibilities within the site specific plan

For purposes of this plan, an environmental incident is defined as an actual or threatened release of hazardous materials or hazardous waste into or on surface waters, sanitary sewer, soil, or air. A threatened release is included in the definition as it represents an incident which may require response of the

emergency response staff (e.g., leaking into containment structures or a release on pavement which requires clean-up)

The Emergency Coordinator shall assume overall responsibility to ensure the actions identified within this plan are carried out during an emergency. The Emergency Coordinator is required to have the authority to expend those resources necessary to perform those actions necessary for response and mitigation of an environmental incident

All construction sites will have designated hazardous material areas, designated receiving and shipping areas, and designated hazardous waste areas. The hazardous materials, hazardous waste, and shipping and receiving areas must meet criteria for containment and compatibility which are outlined in detail in the Hazardous Waste and Hazardous Materials Guidelines. Contact Intel’s Construction EHS or Site EHS for copies or questions about these guidelines.

Applicability of this document to projects being performed on established Intel sites are subject to agreements made with existing Intel’s Construction EHS and Site EHS staff and Emergency Response Teams (ERT). Changes which will allow for more efficient execution of this plan or for consistency with existing site response resources should be incorporated into this document with mutual agreement between Intel personnel.

Applicable Plans and Documents

- Hazardous Materials Control Plan
- Hazardous Waste Management Plan
- Wastewater and Storm Water Management Plan
- Storm Water Pollution Prevention Plan
- Air Pollution Prevention Plan
- Solid Waste Management Plan

5.3.3. ROLES AND RESPONSIBILITIES

While the PPEIRP is a site specific document which is to be developed by the General Contractor/Construction Manager, other resources will need to be utilized to complete the document. Intel Construction EHS or Site EHS personnel and ERT staff will assist in the development of the plan. Specifically, each of these organizations has the following roles in plan preparation and evaluation.

GC/CM	INTEL EHS	INTEL ERT
Develop emergency response plan including escalation procedures and provide to Intel’s Construction EHS or Site EHS personnel for ratification	Evaluate state & local RQ requirements & establish reporting contacts	Primary response for spills at sustaining sites
Designate contractor Emergency Coordinator	Perform regulatory notifications upon receipt of alert from emergency teams	
Maintain incident response materials		
Perform training	Ratify emergency response plans developed by GC/CM	
Designate construction emergency response team.	Overall emergency coordinator for site	
Update plan as site develops		

Develop communication mechanisms among subcontractors		
Determine evacuation procedures		

5.3.4. PLAN CONTENTS

The PPEIRP should be the result of a site specific evaluation of potential hazardous material spill and release hazards. This plan will be prepared by the General Contractor/Construction Manager, with the assistance of Intel's Construction EHS or Site EHS personnel. Exact content will be unique to the project location, but the following elements should be included in the plan at a minimum.

5.3.4.1 Site Diagram

The diagram should be of sufficient size to depict facility boundaries and adjacent features important in incident response planning, such as waterways or off site drainage structures which may receive a release of hazardous materials from the job site. The plan should also include, at a minimum:

- Location of hazardous materials and regulated and/or chemical wastes
- Location and description of structural spill prevention controls
- Location of incident response material and spill cleanup supplies
- Location of the nearest drainage structure (storm drain, ditch, waterway, etc.) to each of the materials storage areas.
- Location of site materials receiving and shipping areas which may receive hazardous materials or chemical and/or regulated wastes.
- Location of major excavation and earthwork activities and general drainage directions from those areas (due to risk of fuel spills).
- Location of fueling, maintenance, and/or vehicle/equipment washout areas.
- Evacuation routes and assembly areas (determined by GC, approved by Intel's Construction EHS or Site EHS personnel).

5.3.4.2 Designation of Storage Areas:

Hazardous materials and hazardous wastes are to be stored only in designated areas per the requirements of the Hazardous Materials Control Plan (HMCP) and Hazardous Waste Management Plan (HWMP). A general discussion of the types of materials stored in each area and the potential routes of release for these materials should be included in the HMCP and HWMP.

5.3.4.3 Communication

Immediate communication is imperative in preventing exacerbation of an environmental incident and ensuring timely response. Communication systems are to be established for immediate alert among site workers and staff; informing Intel of an emergency incident and; notifying the appropriate regulatory agency as required.

Site communications should include:

- Internal communication system to provide immediate emergency notification and instructions to response personnel
- Emergency alarm or notification system to provide immediate warning to site personnel of an emergency situation, such as a fire

- External telephone and radio communication devices to summon emergency assistance from response agencies

The plan should also include means for contacting Intel's Construction EHS or Site EHS personnel upon the occurrence of an environmental emergency. Intel will provide the emergency coordinator with contact information during plan development. Upon notification, Intel Construction EHS or Site EHS personnel will determine if regulatory agencies need to be alerted of the incident. The GC Emergency Coordinator shall have the authority to contact regulatory agencies as required by law, but should only do so if the designated Intel's Construction EHS or Site EHS personnel cannot be contacted, or if time delay would result in exacerbation of the incident or regulatory violation.

5.3.4.4 Contact Information

The plan will include either a list or matrix of contact information for regulatory authorities and emergency resources. The appropriate authorities and contact information will be determined by the emergency coordinator in conjunction with Intel's Construction EHS or Site EHS personnel. At a minimum, contact information should exist for:

- National Response Center
- State Emergency Response Agency
- State Environmental Agency Spill Reporting Number
- Local Emergency Planning Committee (LEPC), if applicable
- Any County or City Environmental Agency
- Third Party Emergency Response Contractor (evaluated and designated during plan preparation)
- Fire Department
- Police Department
- Sheriff or Highway Patrol
- First Response Agency (determined by Intel's Construction EHS or Site EHS personnel)

In addition to applicable agency numbers, contact information should be provided for the emergency coordinator or designee. Sufficient contractor staff should be included to ensure coverage of multiple work shifts and allow on site response of contractor staff with the authority to allocate resources to initiate containment or clean-up of any released hazardous materials.

5.3.4.5 Reporting Matrix

A matrix of the most commonly used hazardous materials should be developed, with the agencies that require notification for releases of these materials designated with each material or material class. The reportable quantity (RQ) for all materials should be determined and included in the matrix. While not every chemical used can be included in the matrix, logical categories should be established which can serve as a reporting reference. As these RQs vary within states and municipalities, the General Contractor/Construction Manager should establish local reporting requirement in conjunction with Intel Construction EHS or Site EHS personnel. Commonly used chemicals are presented in the following table, along with recommended reportable quantities.

Internal and External Reportable Quantities				
Material	Internal Reportable Quantity Report to Immediate Supervisor		External Reportable Quantity Report to <i>Intel's Project Manager and/or regulatory agencies]</i>	
	Spilled to Earth/Earth Berm or Outside Containment	Spilled to Secondary Containment (Non-Earth)	Spilled to Earth/Earth Berm or Outside Containment	Spilled to Secondary Containment (Non- Earth)
Fuels (gasoline/ diesel)	1 gallon	10 gallons	Sheen on surface waters or potential to reach adjacent property	1,000 gallons with potential to reach surface water
Lubricating oil	1 gallon	10 gallons	Sheen on surface waters or potential to reach adjacent property	1,000 gallons with potential to reach surface water
Flammables	1 quart	1 quart	Identify chemicals and determine RQ	Identify chemicals and determine RQ
Acids/caustic	1 gallon	5 gallons	Identify chemicals and determine RQ	Identify chemicals and determine RQ
Nonflammable solvents (paints)	5 gallons	10 gallons	Identify chemicals and determine RQ	Identify chemicals and determine RQ
Hazardous waste	1 quart	1 quart	Identify chemicals and determine RQ	Identify chemicals and determine RQ

While a summary, information in the table above should be used as a reference only. The GC/CM Emergency Coordinator should have access to more specific RQ information for the hazardous materials used on site. A table or list (such as the USEPA's "Title II List of Lists") should be available to the Emergency Coordinator or included as an attachment to the plan. Any state specific RQ information should be included with the more detailed reference list.

In certain cases, specific numeric criteria for RQ are not established, but site events may require reporting or corrective action. Examples of these situations are inadequate dust control (visible emissions), breach of erosion control measures, and excess turbidity introduced into adjacent waterways. Intel's Project Manager will assist the GC/CM in establishing notification criteria for non-quantified RQ based on a review of specific local requirements and site conditions.

5.3.4.6 Incident Response Supplies

The plan should evaluate each of the potential hazardous material storage areas and establish the location and contents of appropriate response and clean-up supplies. These materials typically include absorbent booms and pads, oil dry, personal protective equipment, clean-up tools, simple chemical detection equipment such as pH paper, absorbent wipes, heavy duty waste bags, labels, caution tape, etc. Specific items and inventories will be dictated by the hazards and quantities of chemicals in the area. It is recommended that the types of hazards for each area be discussed in the plan, and a specific inventory sheet for each response kit be included as an attachment. At a minimum, response kits will be required in each of the designated hazardous materials and hazardous waste storage areas depicted on the plan's diagram. At least one of the incident response kits should be able to be moved to an incident which occurs anywhere on site; ideally the unit will be pallet mounted or otherwise mobile.

5.3.4.7 Maintenance of Response Supplies

A system for maintaining sufficient inventory of clean-up equipment should be developed once the appropriate materials are specified. The system should consist of routine inspections of the materials and conditions under which re-stocking of the supplies should occur, as well as the time frame in which the re-supply will occur. It is recommended that routine inventories of the supplies be avoided, as this time-intensive type of system will probably not occur with the needed frequency. The General Contractor/Construction Manager may wish to establish kits with fixed inventories, which are then sealed until needed. A frequent inspection of the seal condition will then determine whether a full inventory and re-supply is warranted. Should routine maintenance of supplies be required (respiratory protection equipment, fire extinguishers, etc.), the system for ensuring maintenance on these items should be included in the plan.

5.3.4.8 Designation of Emergency Response Team (ERT)

The General Contractor/Construction Manager should designate a construction emergency response team to respond to potential environmental incidents. Designation of the response team members should be included in the plan.

The purpose of the Construction Emergency Response Team is to:

- Protect personnel from further hazard
- Get the area to a safe state
- Stop, control, or contain release of hazardous materials at the job site
- Clean up the hazardous materials after the release is controlled
- Treat, package, store, and dispose of the released material resulting from the release
- Decontaminate the area and equipment

The Construction Emergency Response Team will be led by an incident commander who will be a representative of the General Contractor/Construction Manager. The purpose of the incident commander, a trained member of the Construction Emergency Response Team, is to provide:

- Overall authority and control of the emergency situation
- Oversight and direction concerning the safety of onsite employees, incident response team members, and the public
- Technical direction and responsibility for carrying out the actions to assess, mitigate, and clean up the spill; dispose of the hazardous wastes; and decontaminate the equipment and area
- Coordination with outside responders
- Notify Intel of environmental incidents
- Notification and contact with outside agencies if Intel's Project Manager is unavailable
- Protection of job site facilities

The Construction Emergency Response Team will consist of at least *eight* members. The members will include the Emergency Coordinator, supervisors, and technicians. Members are required to pass annual physical examinations that allow the employee to use respiratory protection and provide unrestricted lifting. While training requirements may vary by state, a 40 hour training certification, consistent with 29CFR 1910.120 (e)(3) is required. On an established manufacturing site, the existing ERT resources may be used for construction emergency response if prior agreement has been reached with the site ERT coordinator.

5.3.4.9 Evacuation Procedures

The plan should include mechanisms utilized to signal a site or area evacuation. These mechanisms should include the means by which the evacuation will be initiated, routes of evacuation, areas for assembly, and means for accounting for personnel. Due to the variable staffing associated with a major construction project, it is recommended that a system of sweeps be utilized by the incident response team, rather than attempting to reconcile staff by means of headcount in the various assembly areas. Staff with the authority to evacuate should be specified in the plan, including methods for designating responsible individuals during periods of overtime shifts and absences of the primary emergency coordinator. Evacuation routes and assembly areas will be developed in conjunction with Intel Construction EHS or Site EHS personnel.

5.3.4.10 Handling of Incident Response Debris

The plan must specify means for collecting and containerizing debris and clean up material generated during an environmental incident. Any contaminated soil must be fully excavated and confirmation sampling must be conducted on underlying soil to verify clean-up. Specific steps and guidance for labeling, storing, and arranging for disposal through Intel's Construction EHS or Site EHS personnel should be included in plan. All sampling results must be provided to Intel's Construction EHS or Site EHS personnel. A simple container matrix can be developed as reference for the various types of debris and the appropriate containers (e.g. poly containers for corrosive, closeable metal drums for fuels and solvents, poly lined roll-off dumpsters for large quantities of fuel contaminated soils, etc.) Intel will manage all wastes generated on the site. This includes the characterization and disposition of wastes generated from releases. This waste shall be managed per the requirements of the HWMP and SWMP.

5.3.5 TRAINING PROGRAM

The General Contractor/Construction Manager will provide training and operating instructions to personnel involved in the handling, operation, and maintenance of hazardous materials, including the specifics of the incident response plan. Both formal classroom and on-the-job training will be provided. This training may be provided by an outside vendor if internal resources are not available within the GC/CM staff. In addition, members of the construction incident response team will require specialized training in hazardous materials management.

Formal classroom training provides an informational overview of safe storage and handling procedures for oils, materials, or wastes encountered at the job site. The general classroom course includes at a minimum:

- Procedures for assuring personnel safety
- Procedures for preventing incidents
- Procedures for incident/emergency response to hazardous materials, including oil products and hazardous wastes
- Incident containment and cleanup
- Incident reporting
- Procedures for spilled hazardous materials disposal
- Proper storage handling of hazardous materials
- Governmental regulations
- Procedures for incident/emergency response

On-the-job training is provided as required by the supervisor responsible for the specific area where an employee works. Initial on-the-job training is provided to the new employee, with periodic updates as required. The emphasis of initial on-the-job training is as follows:

- Providing information on routine duties of the job position

- Incident prevention
- Location and use of personal protective equipment and emergency equipment
- Incident/emergency response measures
- Site-specific information for individual hazardous materials storage use operations and safety
- Where the project extends beyond 12 months following the initial on-the-job- training, employees involved in duties related to hazardous materials will have an annual review. The review will include:
 - Any updating required to address changes in operations and procedures
 - Discussions of significant hazardous materials-related incidents that occurred during the past year
 - Any updating required to reflect equipment modifications and changes

The Emergency Coordinator or its designee and area supervisors are required to complete checklists documenting the training the employee has received after both the initial training and subsequent training and review is successfully completed. The checklist documenting the training completed by the employee should be maintained for 3 years after the date an employee last worked at the site.

5.3.6 PLAN MAINTENANCE

Due to the dynamic nature of a major construction project, the plan must be maintained and updated as various phases of construction modify the site characteristics. The General Contractor/Construction Manager is responsible for updating the plan as these changes occur. Examples of conditions which may warrant plan revision include installation of culverts and storm drain structures, re-grading activities which modify release routes, reconfiguration of roads which modifies evacuation procedures, substantial change in the nature or quantity of hazardous materials used on the site, and addition of significant new release routes (such as roof drains and sumps as buildings approach completion). The General Contractor/Construction Manager should establish a distribution list for the plans and ensure that the plans utilized by the various organizations on site are either revised or superseded by newly distributed plans.

SECTION 5.4 – SOLID WASTE MANAGEMENT PLAN

5.4.1 PURPOSE

The purpose of the Solid Waste Management Plan (SWMP) is to manage solid waste associated with onsite construction and build-out activities. These requirements have been established to assist the General Contractor/Construction Manager and subcontractors in complying with applicable federal, state and local laws, regulations, standards and requirements; Intel's minimum performance standards (MPS); and project and site specific Intel standards and requirements.

While demonstrating compliance with government and Intel standards, this plan is also designed to: Save money, protect the environment by limiting the potential for pollution, and conserve material resources.

5.4.2 APPLICABILITY

Utilize the following Solid Waste Management Plan to establish a process for collecting and segregating solid waste generated by construction activities.

- 5.4.2.1 Recyclable solid waste can either be segregated or commingled depending on local infrastructure. Segregation requires more space, but commingling is often more expensive. Only recyclable solid wastes can be commingled; trash must be segregated at the source.

5.4.2.2 If segregating solid waste, it should be segregated as follows:

- Wood
- Scrap Metal - Segregation of metal items by type (wire, copper, stainless steel etc) will result in higher revenues.
- Hard Plastics
- Concrete
- Asphalt
- Glass
- Drywall
- Landfill/General Trash
- Carpeting Scraps for Recycle
- Soft plastics (example: Styrofoam, packaging films)
- Green Waste (example: land clearing debris)

5.4.2.3 Solid waste collection bins must be placed within close proximity to projects to enable ease of use. Bins may need to be moved to support the project as it progresses.

5.4.2.4 Area around bins to remain debris-free through the establishment of routine housekeeping practices.

5.4.2.5 Physical Bin Requirements:

- Labeled
 1. Affixed/placed at accessible ends of containers
 2. Contrasting colors
 3. Wind and Weather resistant (example: magnetic, wooden A-frame, etc)
- Covered – Applies to metal and general trash bins. Local regulations may require the covering of other bins.
- Utilization of platforms/dock as needed to mitigate safety hazard associated with placing solid waste into bins.

5.4.2.6 Solid Waste Hauling and Data Reporting

- General Contractor to develop agreement with solid waste hauler
- Solid waste hauler to provide shipping data on a regular basis to General Contractor
- General Contractor to provide solid waste data to Intel EHS, or other Intel designated individual, on a monthly basis. Reports are to be submitted by the 10th of the month following the end of the reporting month.

For each project, a minimum requirement of at least 90% of construction-generated debris (measured by either weight) to meet the USGBC LEED (Leadership in Energy and Environmental Design)-NC Criteria for diversion of construction waste management. All recycled materials will be credited toward the recycling goal EXCEPT alternative daily cover, soil and rock from excavation activity. Recycling will be driven by available markets for recycled materials. Also, the prices paid will be affected by the amount of contamination in these materials.

Procurement and work management practices can influence the success of achieving maximum recycling and reuse of materials. Where landfill disposal costs are high, more effort in processing and separating waste materials can result in significant cost savings. All of these factors will be considered when implementing the SWMP.

5.4.3 COMMUNICATION AND PLANNING

The following section delineates the key elements of the SWMP. A SWMP process flow diagram has been included in Figure 1 below and provides an overview of the process steps where solid waste management requirements have been established. Communication and planning objectives for each of these steps is discussed within this section of the plan. Appendices Q-T can also be used as “in-field” checklists to ensure compliance with this plan.

5.4.3.1 Solid Waste Reduction Strategies

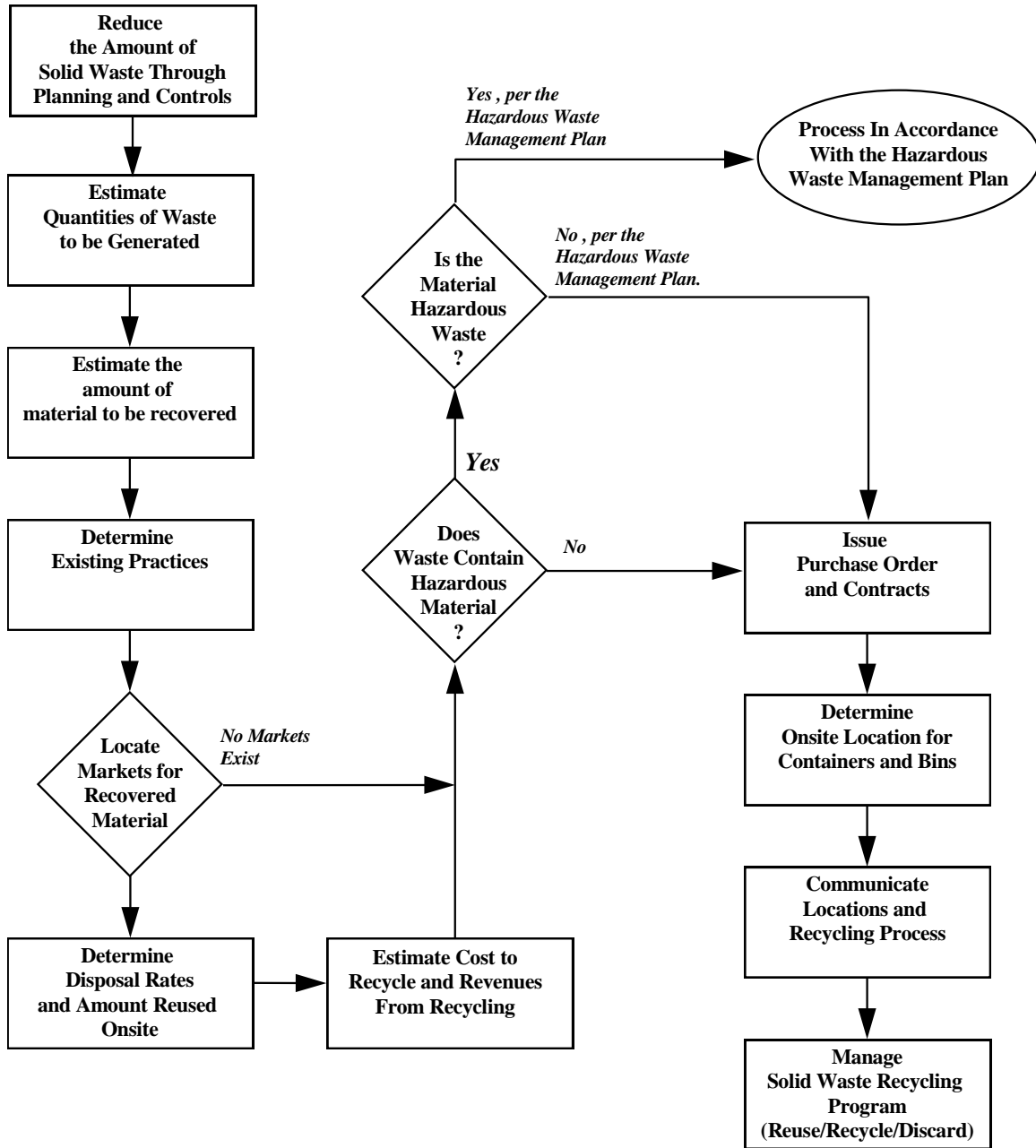
The first step of the solid waste reduction plan is waste reduction. All contractors and their subcontractors are responsible for reducing the amount of solid waste generated on the site. The General Contractor/Construction Manager is expected to plan and implement all work activities in a manner that minimizes construction-related solid waste. Appendix Q can be used to assist with the solid waste reduction strategies for Intel construction projects.

Source reduction begins largely in the planning and design stages of a project. The following activities encourage source reduction of solid waste:

- Alter purchasing practices to reduce waste. Wherever possible, buy supplies in bulk and closely monitor unused supplies.
- In landscaping design, avoid unnecessary clearing of trees. Chip roots and branches onsite.
- Specify in purchase orders that suppliers deliver goods with a minimum of packaging, or require suppliers to remove and handle packaging after delivery (unless packaging reuse value is high).
- Minimize excessive materials used, optimize use of purchased materials.
- Use framing components manufactured offsite.
- Reuse excess lumber in the construction process.
- Ensure that materials are measured to avoid excessive end cuts.
- Secure onsite roll-off boxes to discourage unauthorized dumping.

FIGURE 1

SOLID WASTE MANAGEMENT PLAN Process Flow



5.4.3.2 Solid Waste Estimates

The General Contractor/Construction Manager is responsible for performing an evaluation of potential waste materials and determining the feasibility of recycling the wastes identified. The evaluation will result in a project recycling plan, including identification of markets for the recycled material and waste disposal facilities. Specifically, the evaluation should address the following:

5.4.3.2.1 Estimate Amount of Solid Waste to be Recovered

The General Contractor/Construction Manager is responsible for estimating the amount of material to be recovered. This is accomplished by:

- Determining the potential amount for re-use at construction site
- Determining the volume available for market
- Determining the volume available for disposal

5.4.3.2.2 Determine Existing Solid Waste Practices

The General Contractor/Construction Manager will review any existing practices for reusing, recycling and discarding solid waste. For sustaining operations they will determine existing practices, such as recycling programs and goals, separation methods, reuse objectives, contracts with end-use markets, etc. For green field sites, a review of local/regional practices for construction solid waste will be conducted.

The General Contractor/Construction Manager is also responsible for performing weekly solid waste volume estimates (in cubic feet). This typically includes wood, concrete products, aluminum, ferrous metal, other non-ferrous metal, sheetrock, land clearing waste, plastics, paper, and cardboard.

Appendix R can be used to assist with tracking solid waste estimates for Intel construction projects.

5.4.3.3 Solid Waste Management Return on Investment (ROI)

The General Contractor/Construction Manager is required to locate markets for wood, asphalt, concrete products, aluminum, ferrous metal, other non-ferrous metal, sheetrock, land clearing waste, plastics, paper, and cardboard. Determine current unit prices and product specifications required for scrap and resale.

5.4.3.3.1 Determine Disposal Rates and Amounts Reused Onsite

The General Contractor/Construction Manager will be responsible for contacting local landfill disposal sites for current rates and determining those raw materials likely to be re-used on the site.

5.4.3.3.2 Estimate Costs to Recycle and Revenues

The General Contractor/Construction Manager will be responsible for estimating labor, material, equipment, hauling, and disposal costs and revenues from reuse and sold recycled materials.

Appendix S can be used to assist with ROI evaluations for Intel construction projects.

5.4.3.4 Solid Waste Disposition and Tool Disposition

Prior to implementing any new recycling strategies at an Intel site, the General Contractor/Construction Manager must prepare a recycling proposal that includes a ROI summary. This information must be provided to the Intel Project Manager for review. If approved, the General Contractor/Construction Manager will issue purchase orders and contracts for construction solid waste processing, storage (roll-off boxes, bins), transportation, end-use markets, and final disposal.

Note: all final disposition arrangements must be coordinated with Intel's Construction EHS or Site EHS personnel.

The contractor to use only Intel qualified Scrap Suppliers for Scrap SOW

Appendix BB: The Tool Scrap Policy

Appendix T can be used to assist with disposition reviews for Intel construction-related solid waste.

5.4.4 SOLID WASTE MANAGEMENT PLAN IMPLEMENTATION

The General Contractor/Construction Manager is responsible for locating onsite locations for solid waste bins, boxes, and staging areas. The General Contractor/Construction Manager is also responsible for ensuring that all contractors and subcontractors are aware of requirements and resources available for implementing the SWMP.

The General Contractor/Construction Manager will perform the following:

- Provide signs on bins or containers describing specific materials to be recovered.
- Communicate location of materials, methods of solid waste separation and processes, locate storage areas, including and bins and boxes to subcontractors.
- Define the responsibilities of contractors and subcontractors in regards to reusing, recycling and disposing of waste materials.

5.4.5 PERMITS AND PLANS

Following is a list of plans whose requirements need to be reviewed for successful execution of an overall waste management program.

- Chemical Waste Management Plan
- Hazardous Material Control Plan

5.4.6 TRAINING

The General Contractor/Construction Manager is responsible for communicating the objectives and expectations of the Solid Waste Management Plan to construction managers, subcontractors, and applicable personnel who will be required to implement this plan.

5.4.7 AUDITING

As an indicator of both performance and conformance with the Solid Waste Management Plan, the General Contractor/Construction Manager will prepare a program report on a monthly basis. This report will

provide the following types of information: Appendix T contains reference worksheets that may be used in summarizing the solid waste recycling performance.

- Total tonnage of waste generated
- Tonnage of waste recovered for reuse
- Tonnage of waste recycled and capital cost recovered by recycling
- Tonnage of waste disposed of as shipped solid waste and cost associated with shipping the waste.

This report will be submitted to Intel's Construction EHS or Site EHS personnel for review on a monthly basis by the 10th of each Month.

The data must be sent into the Intel utilizing the format defined in the Appendix T

SECTION 5.5 – WASTEWATER AND STORM WATER MANAGEMENT PLAN

5.5.1 PURPOSE

The purpose of the Wastewater and Storm Water Management Plan is to establish requirements and instructions for the management of construction related wastewater and storm water. These requirements have been established to comply with: applicable federal, state, and local laws, regulations, standards and requirements; Intel's Minimum Performance Standards (MPS); and project and site specific Intel standards and requirements.

Construction activities that result in the disturbance of more than 1 acre of land (or less if part of a larger common plan of development) require permits in many jurisdictions. For these activities in the U.S., a federal National Pollutant Discharges Elimination System (NPDES) Storm Water Construction Permit or State NPDES Storm Water Construction Permit must be obtained. NPDES Permits and accompanying Storm Water Pollution Prevention Plans (SWPPP) or country-specific equivalent plan must be in place prior to the start of construction. The NPDES Permit and Plan must also be maintained on site for the duration of the project and updated as required by applicable laws, agency inspectors or site environmental personnel.

The GC will have a review with the Intel Site Environmental Engineer prior to any submittal for a NPDES or other water permits.

5.5.2 APPLICABILITY

The Wastewater and Storm Water Management Plan applies to all contractors and their subcontractors involved in activities that result in the generation of wastewater or the discharge of storm water associated with these activities at an Intel site. It is the expectation that each project will follow the site Master Plan and incorporate any federal, state, laws, property sale agreements (e.g. warranty deeds) and/or local ordinances as necessary into the project (e.g., tree mitigation measures, endangered species concerns, storm water easements etc.).

Each contractor/subcontractor will be responsible for the wastewater from construction and build-out related activities that are contractually their responsibility. The General Contractor/Construction Manager is responsible as the "operator" for the management of all storm water discharges in compliance with all provisions of the Clean Water Act at the Intel site.

The General Contractor/Construction Manager is responsible for implementing site programs with its subcontractors to facilitate compliance with the provisions of this guideline. These processes may include Best Management Practices and minimum performance requirements implemented by the various subcontractors. In addition, the General Contractor/Construction Manager may be responsible for

establishing and maintaining storm water and wastewater control facilities (such as truck wheel washes) which are utilized by multiple subcontractors.

The following example activities and processes result in the generation of wastewater and are subject to the requirements of this document:

- dust control
- clearing, grading and excavating
- fire-fighting activities
- truck wheel wash
- wash out of concrete trucks, building, other structures
- equipment cleaning
- cleaning of painting equipment
- pipe and process support equipment pressure testing
- pipe and equipment flushing and passivation
- dewatering subsurface soils

Water that comes in contact with the surface of the construction site as a result of precipitation (e.g. rain, snow, hail, ice) is considered as storm water associated with construction activity and also is subject to the requirements of this procedure.

The following are examples of construction related activities that either generate wastewater or storm water discharge that could potentially have an undesired environmental effect on water quality:

- Earth works (excavate, pile, fill, scrape, etc.),
- Washing and clean out of mobile equipment (truck wheel wash, wash out of concrete cement trucks, etc.),
- Washing and cleaning of structures; roads; and chemical/paint application equipment (pressure washing outside of buildings, wash down pavement, cleanout of sprayers and paint brushes),
- Application of water to control the generation of dust from earth and aggregate traffic routes,
- Leak testing, flushing, passivation of process support equipment and pipes (fire protection, water supply, hot water and steam, ultra pure water, condenser/cooling/chiller water, wastewater, sanitary wastewater, storm drains), and
- Dewatering water associated with construction activities

The following is a brief summary of the key elements, by construction activity, that need to be addressed to protect water quality, both on and offsite, and manage site wastewater in accordance with the applicable provisions of the Clean Water Act and any additional local, state and/or federal laws and regulations and requirements of Intel and the General Contractor/Construction Manager. Appendices U through AA are provided as in-field checklists to ensure compliance with this plan.

Coordination into the larger scope of activities of the site are important elements of this guideline. To this end it is the expectation of the Contractor to include within the program coordination efforts and/or plans that include:

- Chemical approvals for all materials brought onsite
- Coordination with Intel EHS owner to contact municipalities for hydraulic loading to POTW potential upsets during flushes
- Coordination of construction BMPs (e.g. retention/detention/sedimentation ponds), where practicable remain in place and serve as the sustaining site storm water design BMPs as a cost saving and Site Master Planning effort
- Coordination of construction BMPs (e.g. drainage swales, retention/detention/sedimentation ponds), with utility corridors and Site Master Planning efforts to avoid demolition during construction

- Transition of the construction SWPPP into sustaining and inclusion of future activities (Noise and NOTs)
- No discharges onto adjacent non Intel property

5.5.3 ROLES AND RESPONSIBILITIES

Intel

- In the United States (US), Intel and General Contractor/Construction Manager jointly file the General Permit for Storm Water Discharges from Construction Activity (USEPA NPDES permit) - Submit Notice of Intent (NOI) to appropriate storm water agency
- Obtain copy of the permit, forward a copy on to GC
- Review GC SWPPP to ensure completeness; supply any information needed
- Work with GC to determine BMPs to be used
- Conduct periodic audit of BMPs, inspection reports, etc. to ensure the SWPPP is being followed
- Verify all construction is complete and final BMPs are in place
- Prepare NPDES Stabilization(where applicable or equivalent) / Closure Plan. Intel intends to accept sole operation of the NPDES permit; storm water pollution prevention planning including maintenance of all best management practices (BMPs) when site construction activities end. Stabilization practices (temporary seeding) are not possible in the summer months to the degree required in the permit, therefore the permit must remain open and where necessary temporary BMPs maintained.
- Submit Notice of Termination (NOT) upon completion of the project

General Contractor/Construction Manager

- Intel and General Contractor/Construction Manager jointly file the General Permit for Storm Water Discharges from Construction Activity (USEPA NPDES permit) - Submit Notice of Intent (NOI) to Intel for agency submittal
- Identify a responsible person for storm water compliance
- Supply necessary information for NOI
- Write SWPPP to cover requirements for construction activities identified in the permit
- Ensure training of SWPPP requirements to affected personnel
- Conduct work in such a way so as to minimize/eliminate storm water run-off
- Work with Intel to determine best BMPs
- Maintain BMPs and inspect as required by the permit
- Maintain records of all inspections
- Assure construction activities are terminated and stabilization has occurred in accordance with the NPDES Stabilization / Closure Plan
- General Contractor/Construction Manager to prepare the Notice of Termination (NOT) for the construction NPDES Permit to be filed under Intel cover letter and submitted to EPA at the time when construction activities are terminated and stabilization has occurred in accordance with the NPDES Stabilization / Closure Plan. Intel accepts operation of the NPDES permit, in accordance with Federal Register/ Vol. 63, No. 31/Tuesday, February 17, 1998 / Notice 7861, when these conditions of the Stabilization / Closure Plan are completed and finalized by field inspection and letter of acceptance. (These NOT conditions are to be included in the Minimum Performance Requirements of the Intel GC Contract)
- Ensure all construction activities are complete and permanent BMPs are in place

5.5.4 EXPECTATIONS AND SUCCESS CRITERIA

Media	Owner	Regulatory Driver	Scope	Success Criteria	Verification
Water					
SWPPP	GC	CWA : General Construction NPDES	<ol style="list-style-type: none"> GC will submit to Intel an NOI GC will implement all aspects of the SWPPP. GC will integrate/create programs to achieve the success criteria including and not limited to silt fences and management of BMPs. The GC will be a stakeholder in the EMS Storm Water (SW) sub-group 	<ol style="list-style-type: none"> No erosion/silt laden effluent will leave the site. No water will leave the site with any noticeable sheen or discoloration including turbidity. Upstream turbidity equivalent to downstream turbidity. Implementation of all aspects of the SWPPP including BMPs with a change control process and all other required actions. 	<ol style="list-style-type: none"> SWPPP Logs SWPPP up-dated
SWPPP	Intel	CWA : General Construction NPDES	<ol style="list-style-type: none"> File NOI Intel will create SWPPP with stakeholder within the EMS SW sub-group Intel is a stakeholder in the EMS SW sub-group 	<ol style="list-style-type: none"> Assuring integration of contractors success criteria to the overall site SWPPP 	<ol style="list-style-type: none"> Periodic review of logs/BMP effectiveness within the EMS SW sub-group
Waste-water : Flushes	GC	Flush Permits needed to ensure conditions of the Industrial User Permit	<ol style="list-style-type: none"> The GC is responsible for flushing with only approved chemicals (via the Chemical Approval Process) to approved discharge locations with volumes, duration's and chemicals identified in the WCP (SIPP). 	<ol style="list-style-type: none"> The GC will successfully implement and complete WCP for all flushes (SIPP) 	Approval of the WCP and then successful execution to the plan
Waste-water : Flushes	Intel	Flush Permits required by the municipal Industrial User Permit	<ol style="list-style-type: none"> Intel will integrate flush process with the WCP known as SIPP Intel will create and maintain all discharge permits 	<ol style="list-style-type: none"> Successful integration of targets and limits into construction WCP and sustaining DMS. 	<ol style="list-style-type: none"> Successful WCP Successful compliance monitoring program

5.5.5 SITE PREPARATION AND EARTH WORK

Erosion control and sediment control plans are required to be prepared and submitted to the local building officials for approval, prior to being issued a building permit. This approval is required before site clearing, preparation or earth work can begin. The agency responsible for the issuance of the permit varies dependent on the location of the site. It could be a local agency, state agency, the U.S. Environmental Protection Agency, or equivalent governmental agency depending upon country of work. The agency usually provides a preprinted application form that the applicant is required to complete and submit to the agency. At a minimum, the Erosion and Sedimentation Control Plan conforming to the provision of the NPDES requirements of the 2003 EPA Construction general permit must be met. Key elements to be addressed associated with site preparation to protect water quality and manage the construction site's wastewater, include:

- Erosion control measures such as vegetative buffers, mulching, netting/mats/blankets, temporary seeding, permanent seeding, sod stabilization on stock or spoil piles of dirt; cuts into the sides of earth embankments, and sloping earth surfaces.
- Sediment controls such as silt fencing, straw bales/bio bales, sediment traps, sediment basins, storm inlet protection, drainage swales, check dams, contour furrows, terracing, pipe slope drains, rock outlet protection to protect the sediment from entering into creeks, rivers, lakes, storm sewers or drainage ditches.
- Erosion and sediment control measures should be used as necessary, not only to prevent/manage storm water runoff from the site but also should be considered to manage or prevent storm water run-on to the site from adjacent properties.
- The inspection and maintenance of the site's erosion and sediment control measures is critical to ensure these measures will be able to adequately handle a storm event. A construction site is in constant change, which requires changes and additional erosion and sediment control measures. Erosion and sediment control measures should as a minimum be inspected once a week between storm events and daily during and immediately following storm events. A log should be kept recording the inspections. The log book should include the following information:
 - name of the inspector
 - date and time of the inspection
 - weather conditions at the time of the inspection
 - any observations where the erosion and sediment control measures have failed or are in need of maintenance/repair
 - date, time and name of individual notified to make the necessary repairs or perform maintenance
 - When applying water to the non paved roads and construction areas the volume of water should not result in excess water running off into creeks, storm drains or lakes.

See Appendix U for Site Planning Activities Checklist

See Appendix V for Area Preparation for Erosion/Sediment Control Checklist

See Appendix AA for Erosion/Sediment Control Sample Inspection Log

5.5.6 WASHING & CLEAN OUT OF MOBILE EQUIPMENT

Construction site activities often include several activities associated with the washing and cleanout of mobile equipment. These activities include:

- Truck wheel wash prior to exiting the site and entering paved public roads
- Concrete cement trucks and pumper truck exterior washing and interior wash out
- High pressure water washing of heavy earth moving equipment for purposes of maintenance / repairs or prior to removal from site.

Key elements to be addressed associated with the washing and clean out of mobile equipment to protect water quality and manage the construction site's wastewater include

- The washing and clean out of mobile equipment introduces petroleum products (gasoline, diesel, fuel oil, hydraulic fluids, lubricants and coolants) to the wastewater and the environment
- These washing activities should be performed in designated areas that have been selected such that resulting wastewater will not enter onsite or offsite creeks, wetlands, rivers, lakes or drainage ditches. These designated areas should be posted and their locations communicated to the truck drivers
- The resulting wastewater from these activities should not be discharged into a municipal sanitary, industrial, or storm sewer system

See Appendix W for Area Preparation for Mobile Equipment Washing & Cleaning Checklist

5.5.7 WASHING OF STRUCTURES AND SMALL EQUIPMENT

Construction activities normally include the washing of exterior structures (concrete, brick, metal) to remove dirt either as final cleaning or in preparation for applying a sealant or coating. In addition the equipment that is used to mix or apply the sealant or coatings require cleaning. These activities can generate wastewater containing pollutants (dirt, metal, aggregate, paint, solvent, oil, grease). Key elements to be addressed associated with the washing of structures and small equipment to protect water quality and to manage the construction site's wastewater includes:

- The wastewater from these activities cannot be discharged into municipal sanitary, industrial or storm sewer system.
- The wastewater should not be disposed on the ground if as a result there remains permanent stain or discoloration (e.g., paint stains).
- Water based paint waste and clean up liquids should be placed in containers, with remaining liquids shipped off site to be managed in manner approved by Intel.
- Waste liquids containing petroleum or oil based cleaners, solvents, mineral spirits are not to be disposed on the ground. These liquids are to be placed in approved containers and managed as a waste for offsite disposal that first must be approved by Intel.

See Appendix X for Area Preparation for Small Equipment Washing & Cleaning Checklist

5.5.8 PASSIVATION, LEAK TESTING & FLUSHING OF PROCESS SUPPORT SYSTEMS

Following construction activities and prior to placing equipment and piping into service it is necessary to perform passivation, leak testing and flushing activities. These activities generate a substantial volume of wastewater that must be properly managed. The primary systems include equipment and piping associated with:

- Fire protection
- Potable water
- Ultra pure water
- Boiler hot water/steam
- Chilled water
- Condenser/cooling tower
- Wet scrubber
- Wastewater collection/treatment

To ensure proper wastewater management, the Contractor must consider the following prior to performing passivation, leak testing and flushing activities:

- Understand the entire quantity of wastewater to be generated. The volume can be very large, however the duration of time the wastewater is generated can be relatively short (a matter of hours instead of days)
- Determine how the wastewater will be managed. This requires not only physical provisions to manage these waters but also requires having the necessary approval(s) from the local agency if these waters are to be discharged to the local sanitary sewer system
- Fully comprehend any and all detergents, biocides, corrosion inhibitors or other chemicals that will be in the wastewater.
- All discharges to the sanitary sewer must meet applicable discharge limits and must be approved by Intel's Construction EHS or Site EHS prior to discharge. Many municipalities require analytical testing prior to discharge therefore the project team must account for this potential project delay
- At no time is dilution an acceptable means to meet discharge limits. The mass of the pollutant remains constant and can have harmful effects on local sewage treatment plant. Treatment may be required prior to discharge and should be factored into planning.

See Appendix Y for Area Preparation for Leak Testing, Flushing, & Passivation of Systems Checklist. Also, many Intel sites have "Flush Permits" that are required for all construction related wastewater discharges (including but not limited to those discussed in this section as well as tool install/qualification, etc.). Contractors must be familiar with and act in accordance with site flush permit requirements prior to any wastewater discharge.

5.5.9 DEWATERING SUBSURFACE SOILS

Local site conditions, coupled with the required depth of site excavation determine whether dewatering of the subsurface soils is required. These parameters along with the type and use of the structure to be built below grade, determines whether dewatering will be required temporarily for only construction or permanent. There needs to be a place to pump this water for either onsite retention or offsite disposal. Depending on the quality of the water, the amount of the water and the duration the water to be generated, a permit from the local or state agency to store or dispose of this maybe required. Key elements to be addressed with respect to the management of generated dewatering liquids to protect water quality and manage the construction site's wastewater include:

- The quality of the dewatering water. If there had been a preexisting site condition that resulted in the site's groundwater becoming contaminated, then the options for the management of the this water may be limited.
- There may be state or local requirements regarding the management of dewatering water that will dictate how these waters will be stored and disposed.
- Need to make sure there are adequate provisions to store and discharge the dewatering waters so as not to cause either onsite or offsite flooding, erosion and sediment control issues.

See Appendix Z for Area Preparation for Dewatering Subsurface Soils Checklist

5.5.10 RECORD KEEPING

The following records (if applicable) shall be maintained for at least three years:

- All records used to complete NPDES Permit Application and any supplemental information, if applicable
- NPDES Monitoring Records, if applicable
- Calibration and Maintenance Records
- Original Strip Chart Recordings for Continuous Monitoring Instrumentation
- Reports required by Permits, Environmental Impact Statements, or other agency mandates or Intel commitments

SECTION 6 – APPENDICES
APPENDIX A
SIGNAGE AND FORMS EXAMPLES

BARRICADING

BARRIER TAPE OWNERSHIP FORM

START DATE: _____ FINISH DATE: _____

COMPANY _____

INTEL SPONSOR _____
 CONTACT NUMBER _____

LEAD / FOREMAN: _____
 PHONE _____

TYPE OF WORK/ISSUE: _____

HAZARDS: _____

Red = Danger "Do not cross unless owner of barricade is asked"
 This tape is often used to define areas where energized devices exist, equipment work areas, or areas of immediate danger which are exclusive to those performing the work and restricted to all other parties. Permission must be granted to enter the area.

Yellow = Caution "can cross if you look for hazards"
 This tape is usually used to define hazardous areas, such as excavations, open manholes, overhead work, PVC gluing (no Hotwork within 30 feet) etc. Tape should completely block off any access to the area. Personnel other than those assigned to the work area are not restricted from the taped area, but must enter only after determining the hazard(s) and taking appropriate actions to protect themselves.

White Tape With Orange Font = Tool Move "Do not cross to avoid cross contamination"
 This tape is used for high risk copper designations during tool moves

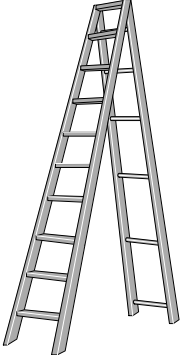
Orange = ERT "Do not cross unless you are an ERT member"
 This tape is used to define areas where immediate danger and/or hazards exist. Personnel other than ERT members are restricted from the taped area

Blue = Tool Qualification in process "Only with permission from owner can you cross"
 This tape defines equip that is in the process of being qualified for production

Black = All Non Safety Related Issues
 This tape defines lay down area, tool box or detail areas. This tape shall not be managed by safety unless it blocks any access or egress

LADDER

LADDER IN USE



Date: - _____

Start Time: - _____

Finish Time: - _____

Contact: - _____

Pager: - _____

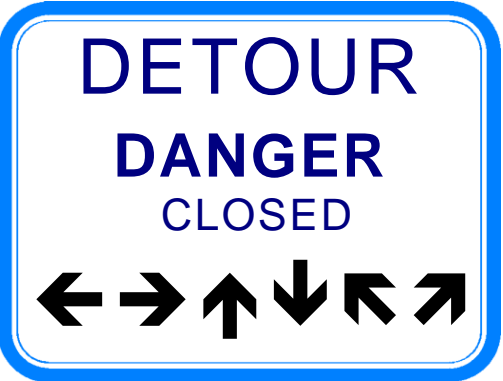
Foreman's Desk:
 - _____
(Column Location)

Contractor: - _____

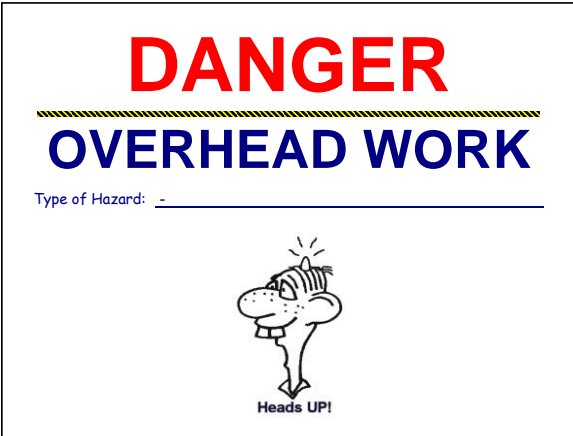
Crew (Foreman) : - _____

- Ladder Safety Policy**
1. Ladders shall be inspected before use
 2. Ladders shall not be placed in front of doors opening towards the ladders unless the door is opened, locked and posted, or guarded on the other side
 3. Do not block access to ladders with materials, carts, etc.
 4. Do not leave tools or materials on top of ladders
 5. One person per ladder (unless ladder specifically designed otherwise).
 6. Select the size and type of ladder based on the work and height to be reached.
 7. Do not use the top two steps of a step ladder
 8. Use both hands and face the ladder when climbing up and down.
 9. Face the ladder while working
 10. Move or reposition the ladder to accommodate its proper use. Do not "walk" ladders while standing on them.
 11. Remain centered on the ladder and never move centerline of body outside either rail.
 12. Do not use booties unless working in a clean room
 13. Do not carry tools in hands while ascending/descending ladder.
 14. All work performed above 6' (i.e. Floor to bottom of feet) requires the employee to be tied off to an approved anchorage point.
 15. When working on ladders, be aware of leading edges (guardrails, RMF, etc) that may place you in the 6' tie-off category.
 16. Lanyards and retractable's shall be used in accordance with manufacturer's recommendations.
 17. Ladders not in use shall be secured at all times
 18. If any of the above criteria cannot be met, contact your Company's Safety Representative.



DETOUR



OVERHEAD WORK



PRESSURE TEST GENERAL

	Pressure Test In Progress	
Company Name: - _____		
Contact Person: - _____		
Phone: - _____ Pager: - _____		
Start Date: - _____ Finish Date: - _____		
Start Time: - _____ Finish Time: - _____		
Size and Type of Material(s) Being Tested: - _____		

Type of Test: Pneumatic - _____ Hydraulic: - _____		
Test Pressure: - _____ Test Duration: - _____		
Test Media: - _____		
Location of Test: - _____		

ODOR NOTIFICATION GENERAL



Odor Notification

Date: _____ Start Time: _____ Work Duration: _____
Odor Notification is Per Task And Must Be Removed Daily Hours / Minutes

CONTRACTOR: _____

PRIMARY CONTACT: _____	PHONE: _____
	PAGER: _____
SECONDARY CONTACT: _____	PHONE: _____
	PAGER: _____

Work Location Generating Odor & MSDS Location: _____

ODOR SCENT (Similarities/ Smells like): _____

ODOR GENERATING TASK: _____

Odor Notification Guidelines:

- > This pertains to all odorous tasks.
- > An Odor Notification Form is only good for one day and must be posted in multiple areas wherever the odor may spread. For instance, if you're working in a chase, post the notification at both ends of the chase and adjoining Bays.
- > Prior to start of odorous activity in the FAB, **VERBALLY NOTIFY:** 1) Effected Tool Owners in the area **AND** 2) **Either** the Area Supervisor, Area ERT Member. Communicate to above mentioned effected employees, what you are planning, what it will smell like, and note the name and job title of the contacted personnel on your PTP.
- > Contact SCC at [603.715.1212](tel:603.715.1212) & [603.554.8370](tel:603.554.8370). Advise SCC of your: 1) SIPP # or RWP date stamp, 2) Company Name, 3) Your Name, 4) Location of work, 5) Duration of activity, 6) What the Odorous task will be and what the odor will "Smell Like", 7) your contact number (Pager); and 8) Name of the Supervisor, or ERT that was notified.
- > At the end of your task or shift remove the Odor Notification form and post the Residual Notification signage till all lingering odors are no longer detectable.
- > Contact SCC at [603.715.1212](tel:603.715.1212) & [603.554.8370](tel:603.554.8370). Give SCC your Name and your Company Name. Advise SCC of the status of the Area, (i.e., "Work is complete, I've removed the odor notification form and posted Residual Odor Notification signage... odor should dissipate in approximately two to three hours").

APPENDIX B

Example Energy Control Procedure Template

Equipment ID:	Mfgr:		Model #:		ID #:	
Equipment Location(s):			Date Performed:			
Task(s) To Be Performed:						
Name of Person Performing Assessment:						

A. ENERGY FORM: (CHECK ALL THAT APPLY)

<input type="checkbox"/> 1. Electrical	<input type="checkbox"/> 3. Pressure (pneumatic/hydraulic)	<input type="checkbox"/> 9. Non-Ionizing Radiation
<input type="checkbox"/> a. Low Voltage (50-600V)	<input type="checkbox"/> 4. Vacuum	<input type="checkbox"/> a. Ultraviolet
<input type="checkbox"/> b. High Voltage (600V>)	<input type="checkbox"/> 5. Mechanical - capable of crushing, pinching, cutting, snagging, striking	<input type="checkbox"/> b. Infrared
<input type="checkbox"/> 2. Chemical - Explosion, pressure, extreme heat, fire, corrosive, reactive, oxidizer, toxic	<input type="checkbox"/> 6. Thermal - High Temperature - surface temperature, hot liquids, steam	<input type="checkbox"/> c. RF/Microwave
	<input type="checkbox"/> 7. Thermal - Cryogenic - Contact with super cold surface or with a cryogenic liquid	<input type="checkbox"/> d. Laser
	<input type="checkbox"/> 8. Ionizing Radiation	<input type="checkbox"/> e. Magnetic Fields
		<input type="checkbox"/> 10. Stored - Flywheels, springs, differences in elevation, elevated parts that could drop, capacitors, batteries

B. BASIC PROCEDURES

Lockout Procedure	Procedure To Return Tool To Operation
<input type="checkbox"/> 1. Notify all affected personnel of LOTO. <input type="checkbox"/> 2. Turn off power at disconnect points listed in C.1 <input type="checkbox"/> 3. LOTO or tag each energy control point listed in Column C1. <input type="checkbox"/> 4. Dissipate/disconnect any stored energy. See Column C2 { <input type="checkbox"/> N/A}. <input type="checkbox"/> 5. Block any mechanical parts, remove any mechanical links. Lock blocking in place. See Column C.3 { <input type="checkbox"/> N/A}. <input type="checkbox"/> 6. Verify personnel clear of hazards. <input type="checkbox"/> 7. Verify no hazardous energy. Use circuit tester/meter if electricity is involved. See column C.4 { <input type="checkbox"/> N/A}. <input type="checkbox"/> 8. Attempt to re-start machinery or re-energize equipment through normal means. Return switch back to OFF position. <input type="checkbox"/> 9. Perform required work.	<input type="checkbox"/> 10. Verify Danger Zone is clear of equipment, workers, tools, and test equipment. <input type="checkbox"/> 11. Unlock and remove any blocking devices; remove linkages. <input type="checkbox"/> 12. Reposition any safety devices. <input type="checkbox"/> 13. Warn workers to stay clear of area. <input type="checkbox"/> 14. Remove all locks and tags from energy control points. <input type="checkbox"/> 15. Verify area clear of personnel. <input type="checkbox"/> 16. Re-start/re-energize the equipment. <input type="checkbox"/> 17. Notify all affected and other persons that the lockout has been cleared.

C. SPECIFIC PROCEDURES

Note: Use as reference documents (ex. Piping and Instrumentation Diagram) to identify the appropriate lock out points and normal position of system controls.

Hazardous Energy (Specify form & values including names if for chemical)	C.1 Specific Lockout Locations	C.2 Dissipate Stored Energy At These Points	C.3 Block These Parts/Remove Linkages	C.4 Verify No Residual Energy By These Methods

SHIFT CHANGES: If this procedure lasts more than one work shift, the incoming shift will apply their locks and tags before the departing shift removes their locks and tags or follow specific written Department procedures.

APPENDIX C

CONTROL OF HAZARDOUS ENERGIES ABANDON LOCK REMOVAL FORM

This form is to be used any time a Lockout/Tagout (LOTO) device is to be removed by someone other than the person who placed the LOTO device. The person removing the LOTO device must be directed to do so by management. Failure to follow and document the appropriate steps to remove a LOTO device can result in disciplinary action up to and including termination.

DATE:			TIME:		
1.	Name of LOTO device owner whose lock/tag is to be removed:				
2.	LOTO device owner's extension/pager:				
3.	LOTO device owner's First-Line Supervisor or On-Shift Supervisor:				
4.	Document attempt to contact LOTO device owner.				
	DATE/TIME	METHOD OF ATTEMPTED CONTACT	RESULT		
1.					
2.					
5.	Reason for removing lock (e.g. LOTO device owner called in sick, LOTO device owner forgot to remove lock before leaving site, etc.)				
6.	Evaluate the entire affected system to ensure employees safety before LOTO device is removed. LOTO device(s) removed by:				
	Removed by (Print):		Observed by (Print):		
	Supervisor's (or designee) Signature:		Authorized Employee's Signature:		
	Date/Time::		Date/Time:		
7.	EHS Representative informed (i.e. email or phone call/message) that a LOTO device has been removed within 24 hours of removal.				
	EHS Representative Notified:				
	Date:		Time:		
<i>Method of notifying LOTO device original owner and their supervisor that the LOTO device was removed prior to beginning their next shift.</i>					

APPENDIX D
SITE PLANNING ACTIVITIES
(PAGE 1 OF 2)

1. Identify whether the project will involve any activities that may generate significant amounts of air pollutants. Mark each activity identified below:

___ Site preparation
___ Vehicular traffic
___ Construction material surface preparation & coating
___ Mobile equipment
___ Demolition
___ (Other) _____
___ _____
___ _____

2. Determine what agency approvals, permits or notifications are required for any of the activities listed above.

3. Identify an owner for each permit and ensure required permits are obtained.

Permit _____ Owner _____
Application initiated _____ Application reviewed by: GC _____ Intel _____
Application submitted _____ Permit Issued _____
Permit _____ Owner _____
Application initiated _____ Application reviewed by: GC _____ Intel _____
Application submitted _____ Permit Issued _____
Permit _____ Owner _____
Application initiated _____ Application reviewed by: GC _____ Intel _____
Application submitted _____ Permit Issued _____

APPENDIX D
SITE PLANNING ACTIVITIES (CONTINUED)
(PAGE 2 OF 2)

Permit _____ Owner _____

Application initiated _____ Application reviewed by: GC _____ Intel _____

Application submitted _____ Permit Issued _____

Permit _____ Owner _____

Application initiated _____ Application reviewed by: GC _____ Intel _____

Application submitted _____ Permit Issued _____

4. Verify the necessary performance controls have been established, such as:

___ Indicators to monitor and demonstrate compliance with the wastewater and Storm Water Management Plan

___ Log books required to record inspections

___ Established inspection criteria with owner identified

APPENDIX F
CHEMICAL APPLICATION CHECKLIST

PRIOR TO THE SHIPMENT OF CHEMICALS TO THE SITE FOR APPLICATION, THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER WILL VERIFY THAT:

- ___ 1. Intel has approved the use of the chemical, as indicated by a Hazardous Material Information Sheet showing approval for this specific use of the chemical.

- ___ 2. If the chemical must be applied only by trained and licensed / permitted individuals, obtain a copy of the permit for each individual who will be applying the chemical and submit a copy to the General Contractor/Construction Manager.

PRIOR TO APPLICATION OF ANY CHEMICALS BY THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER OR ANY SUBCONTRACTOR, THE INDIVIDUAL APPLYING CHEMICALS WILL:

- ___ 1. Check wind speed and direction. The chemicals should not be applied when the wind is blowing and there is a threat to sensitive receptors (e.g., employees, residents, local creeks, lakes, estuaries, wetlands or protected flora or fauna, etc.).

- ___ 2. Check weather forecast. The chemicals should not be applied when it is raining or when rain is forecasted and there is a threat to sensitive receptors (e.g., employees, residents, local creeks, lakes, estuaries, wetlands or protected flora or fauna, etc.).

- ___ 3. Read and understand all instructions for the application of the chemical. The chemicals should not be applied at a rate greater than specified by the manufacturer, or as stated in the specification.

- ___ 4. Ensure area is clear of any personnel or animals that may be affected by the chemical per manufacturer's instructions.

APPENDIX G
SURFACE PREPARATION AND COATING CHECKLIST

PRIOR TO THE SHIPMENT OF CHEMICALS OR OTHER MATERIALS TO BE USED FOR SURFACE PREPARATION OR COATING TO THE SITE, THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER WILL VERIFY:

- ___ 1. Intel has approved the use of the chemical, as indicated by a Hazardous Material Information Sheet showing approval for this specific use of the chemical.

PRIOR TO APPLICATION OF ANY CHEMICALS BY THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER OR ANY SUBCONTRACTOR, THE INDIVIDUAL APPLYING CHEMICALS WILL:

- ___ 1. Ensure that sheeting material or other protective measures have been set in place to separate the work area from the rest of the site. Ensure that this has been established in a manner to prevent dust that is generated during bead/sand blasting, or over spray from painting activities, from traveling beyond the immediate work area.

- ___ 2. Check wind speed and direction. Surface preparation and coating activities that are being performed outside and not within enclosed areas should not be performed during windy conditions. This depends on the activity being performed, the chemicals being used, strength of the wind, and the location and distance from the work area to the sensitive receptors (e.g., employees, residents, local creeks, lakes, estuaries, wetlands or protected flora or fauna, etc.).

APPENDIX H
MOBILE EQUIPMENT SETUP CHECKLIST

(Mobile equipment such as portable concrete batch plants and rock crushers are required to have permits from either the state or local agency responsible for the air pollution control program.)

PRIOR TO SITE DELIVERY OF MOBILE EQUIPMENT WHICH REQUIRES EITHER STATE OR LOCAL PERMITS, THE SUBCONTRACTOR RESPONSIBLE FOR THE EQUIPMENT WILL:

- ___ 1. Obtain all required state and local permit(s) for use of the equipment.
- ___ 2. Provide the General Contractor/Construction Manager with a copy of the permits required.

PRIOR TO SITE ARRIVAL OF MOBILE EQUIPMENT THAT REQUIRES EITHER STATE OR LOCAL PERMITS, THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER WILL :

- ___ 3. Obtain a copy of the permit(s) from the subcontractor providing the equipment prior to allowing the equipment onto the project site.
- ___ 4. Independently contact the appropriate air pollution control agency to confirm that a permit is not required, if so stated by the subcontractor, and to confirm the subcontractor's compliance history.
- ___ 5. Identify equipment setup locations that will minimize the potential for air pollutants from the equipment to travel beyond Intel's property.
- ___ 6. Notify the subcontractor of equipment setup and operation areas.

APPENDIX I
DEMOLITION OPERATIONS CHECKLIST

(The demolition of buildings, tanks, piping systems, etc. can often result in the release of air pollutants. Depending on the age of the building, the materials of construction could contain asbestos or lead-based paint. Depending on the chemicals [if any] used, the duct work or pipes may contain residual chemicals of concern [e.g., arsenic in duct work, solvent or petroleum vapors in pipes]. Tanks [above, below and in-ground] also may contain materials which can release vapors or pose a potential hazardous situation when being removed.)

PRIOR TO STARTING ANY DEMOLITION WORK, THE GENERAL CONTRACTOR/CONSTRUCTION MANAGER OR SUBCONTRACTOR TO PERFORM THE WORK WILL:

- ___ 1. Determine the characteristics of the area to be demolished, including any chemical hazards and residues (e.g., lead, asbestos, fuel oil, hazardous chemicals, sludge).
- ___ 2. Determine if any state or local permits are required for demolition (e.g., asbestos removal, lead removal, removal/decommissioning of underground or above ground tanks).
- ___ 3. Ensure that if permits are required, those permits have been obtained.

IF SAND / SHOT / BEAD BLASTING IS TO BE PERFORMED:

- ___ 1. Required control measures must be identified and put in place prior to starting work.

Sand / shot / bead blasting of metal (interior / exterior) tanks, heavy equipment and steel structures generates spent abrasive material and removed rust and paint chips. The paint being removed may contain lead, requiring that additional steps be taken to prevent the release of these materials into the atmosphere and onto the ground/surface waters. Prior to removal of any paint/primer a determination needs to be made whether the materials to be removed contain lead.

IF DISMANTLING OR DISASSEMBLY OF TANKS, PIPES, PUMPS OR VALVES IS TO BE PERFORMED:

- ___ 1. Check for the presence of liquids, sludges or residues.
- ___ 2. Remove any liquids, sludges or residues identified, in accordance with government, owner and contractor requirements, prior to demolition.

APPENDIX J

APPROVED _____ DENIED _____

CONTRACTOR

CHEMICAL USE REQUEST FORM

All chemicals must be approved by Intel's Construction Environmental, Health & Safety (EHS) or Site EHS personnel PRIOR TO being brought to any Intel project site or facility.

This form must be completed by both the chemical use requester and Intel's EHS. It must be accompanied by an up-to-date Material Safety Data Sheet (MSDS) for any new chemical or new chemical use situation. For further information, contact Intel's Construction EHS or Site EHS personnel.

When this approval form and the MSDS are returned they must be kept on file in the chemical requester's office along with an inventory of all chemicals in use by the requester.

REQUESTER:

NAME: _____ COMPANY: _____ DATE: _____

PHONE: _____

INTEL SPONSOR NAME: _____ M/S: _____

PROJECT NAME (IF APPLICABLE): _____

INTEL SITE OF PROJECT: Specify: _____

CHEMICAL USE:

LOCATION OF PROPOSED CHEMICAL USE: _____

DEPT: _____

STORAGE LOCATION: _____

TRADE NAME (MSDS) OF THE CHEMICAL: _____

COMMON NAME OF THE CHEMICAL: _____

SUPPLIER: _____ MANUFACTURER: _____

CHECK ONE: ONE TIME USE: _____ ROUTINE USE: _____

UNUSED CHEMICAL WILL BE COMPLETELY REMOVED/USED PRIOR TO INTEL OCCUPANCY: YES: _____ NO: _____

CHEMICAL USE COULD OVERLAP INTEL OCCUPANCY: YES: _____ NO: _____

CHEMICAL WILL BE IN CONTINUAL USE AFTER CONSTRUCTION: YES: _____ NO: _____

DURATION OF PROJECT: _____ USE VOLUME AVERAGE: _____ VOLUME STORAGE: _____

DESCRIPTION OF USE (Mandatory for Approval): _____

SAFETY CONTROLS, PROCESS/EQUIPMENT USED IN:
WASTE DISPOSAL METHOD / LOCATION (IF APPLICABLE): _____

EHS APPROVAL:

INDUSTRIAL HYGIENIST: _____

DATE: _____

COMMENTS: _____

ENVIRONMENTAL ENGINEER: _____

DATE: _____

COMMENTS: _____

SAFETY ENGINEER (IF NEEDED): _____

DATE: _____

COMMENTS: _____

REV. 2 - 12/09

APPENDIX K

HAZARDOUS MATERIAL RECEIPT CHECKLIST

1. Upon arrival at the hazardous materials receiving area take the following actions prior to accepting the shipment:

___ Verify the hazardous material has been approved for use at the site.

___ Visually inspect the shipment to make sure:

A. The contents have not been damaged and no hazardous material has been spilled or leaked from their shipping containers.

B. The shipping containers have proper identification and labeling.

If any of the verifications or inspections are unsatisfactory, do not accept the shipment. Contact the shipper/supplier to resolve discrepancies, prior to accepting the shipment.

2 After satisfactorily completing receipt inspections and reviews, accept the shipment and complete the following:

___ Log the receipt of hazardous material into the site tracking system with the following information:

A. Material type

B. Material quantity

C. Material storage locations or if to be used upon receipt, use location

___ Determine if the hazardous materials are to be placed in storage for future use or used upon receipt.

If materials are to be placed in storage:

___ Verify the storage area has been setup in accordance with EHS requirements – contact Intel’s Construction EHS or Site EHS personnel with any questions.

___ Arrange for transport of hazardous materials to an EHS approved storage area.

If an approved storage area is not available:

___ verify the materials receiving area meets requirements for storage of the materials until an approved storage area has been established.

If the materials are to be used upon receipt:

___ Ensure personnel are available to assume control of the hazardous materials where they are to be used.

___ Verify all temporary storage requirements for the area of use have been met prior to transporting hazardous materials.

___ Arrange for transport of hazardous materials to the area where materials are to be used.

___ If temporary storage requirements have not been met, verify the materials receiving area meets requirements for storage of the materials until temporary storage requirements have been met.

APPENDIX L
HAZARDOUS MATERIAL STORAGE CHECKLIST

Following receipt and acceptance of hazardous materials on site, those materials dispositioned for storage will be handled and stored as follows:

1. Transportation of hazardous materials:

Trained individuals have been assigned responsibility for escorting the hazardous materials from the hazardous materials receiving area to the designated storage area.

The method of transportation will protect against spillage, leakage or release of any hazardous materials while enroute to the storage area.

The transportation of hazardous materials has been escorted and materials have not been left unattended.

2. Placing hazardous materials in designated hazardous material storage area:

Area checked to ensure no incompatible materials are present.

Adequate access, egress and aisle space is available where the hazardous materials have been placed within the storage area.

The integrity of the container has been checked to verify there is no spillage, leakage or releases of hazardous materials.

Lids and caps are properly installed and secure on the containers.

Hazardous material container labeling is securely affixed to the container.

The hazardous materials storage area is properly posted to reflect:

- A. The hazardous materials contained within the area.
- B. Any access and egress requirements for entry into the area.
- C. Emergency contact information (Position and phone number).

Security measures have been established and are in effect for the hazardous materials storage area.

Hazardous materials inventory has been updated for the quantities of hazardous materials within the hazardous materials storage area.

Note: No more than 30 days supply of hazardous materials will be stored on site at any given time. The total quantity of any hazardous material on the site may impact reporting requirements for that material. Efforts should be made to minimize the amount of hazardous materials on site at any given time.

APPENDIX M
HAZARDOUS MATERIAL DISPOSAL CHECKLIST

1. Prior to disposal of hazardous materials the contractor / subcontractor responsible for those hazardous materials will:

___ Identify those materials that can be returned to storage for reuse.

___ Identify those materials that can be recycled.

___ Identify empty containers that have been contaminated by the hazardous materials and disposition those containers as appropriate (see Section 11).

___ Identify and collect contaminated tools for decontamination.

2. Disposition of materials

___ Hazardous material that has been dispositioned for return to the storage area will be handled in accordance with Appendix F. Any materials inventory should be updated to reflect the quantities of hazardous materials that have been used or returned to storage. Hazardous materials and empty storage containers that can be recycled are packaged, labeled and transported in accordance with approved procedures.

___ Tools/equipment to be decontaminated have been collected, properly bagged / contained, transported to decontamination area and decontaminated in accordance with approved procedures.

___ Hazardous material waste that is to be disposed of is

- A. Transported by trained personnel,
- B. Transported in a manner to protect against spillage, leakage or release of any hazardous materials while enroute to the disposal area,
- C. Properly bagged / contained, labeled, and placed into the appropriate waste container.
- D. Contactors must coordinate with Construction EHS or Site EHS personnel to dispose waste, and cannot ship waste off-site independently for recycling or disposal.

APPENDIX N

DAILY HAZARDOUS MATERIAL STORAGE AREA AND POINT OF USE AUDIT CHECKLIST

This inspection may be conducted to verify proper use of hazardous materials on the job site.

This audit should be conducted using the following criteria:

Postings-Area Postings are attached and reflect: the hazardous materials contained within the area; any access and egress requirements for entry into the area; and emergency contact information (Position and phone number)

Access-Adequate access, egress and aisle space is available where the hazardous materials have been placed within the storage area.

Integrity-The integrity of the container has been checked to verify there is no spillage, leakage or releases of hazardous materials. Lids and caps are properly installed and secure on the containers.

Labeling-Hazardous material container labeling is securely affixed to the container.

Security-Security measures have been established and are in effect for the hazardous materials storage area

Material-Area checked to ensure no incompatible materials are present.

When performing audits list YES if criteria was met, NO if criteria was not met or N/A if criteria was not observed for each of the audit criteria areas. When criteria is not met a description of what was not met should be listed and an AR assigned. When the AR is closed this should be listed under the "Date Corrected" box.

Date		Location		Inspected By	
------	--	----------	--	--------------	--

	Criteria Met?	Deficiency	Action/Owner	Date Corrected
Postings				
Access				
Integrity				
Labeling				
Security				
Compatibility				

APPENDIX O
CONTRACTOR/SUBCONTRACTOR HAZARDOUS MATERIAL CONTROL PROGRAM
COMPLIANCE AUDIT CHECKLIST

This document serves as a performance audit for the Contractor/Subcontractor's compliance with the Hazardous Material Control Program. It is to be used as a tool for both Intel and the Contractor/Subcontractor. When completed, a copy of this document will be made available to the Contractor/Subcontractor while the Original will be maintained by Intel's Project Manager.

Contractor/Subcontractor being audited: _____

Audit Date: _____

Auditor Name: _____ Phone Number: _____

Training

	Criteria Met?	Deficiency	Corrective Action	Owner	Correction Date
Program in Place					
Material developed for training					
Material meets criteria					
Training test or exercise meets objectives					
Qualified and trained instructors					
Documented attendance					

Materials Area - Shipping & Receiving

	Criteria Met?	Deficiency	Corrective Action	Owner	Correction Date
Sub complies with Haz Mat Plan					
Reuseable & recycleable materials labeled & packaged correctly?					
Waste is not stored in work area.					
Containers are maintained in good condition					

Containers are inspected prior to acceptance					
Incompatible materials are stored separately					
Emergency contact information is posted					
Controls exist to prevent any spills or leaks from leaving the storage area					
Only approved chemicals are accepted and in inventory.					
Hazardous materials inventory is accurate					

Work Area

	Criteria Met?	Deficiency	Corrective Action	Owner	Correction Date
Excess chemicals are not located in work area					
Waste materials are contained and labeled					
Disposition of empty containers evident					
Access to the area posted with appropriate warnings and barricades					

APPENDIX P
HAZARDOUS MATERIAL WORK OBSERVATION FORM

This observation form is used to document observations of work practiced by contractors/subcontractors using hazardous materials. These observations are conducted as spot inspections. All records of inspections are to be signed, and submitted to _____ for retention.

Observation By: _____ / _____ Date: _____

(Print Name / Signature)

Observation/Point of Use Location: _____

Hazardous Material Work Area Observation

	Criteria Met?	Deficiency	Corrective Action	Owner	Correction Date
Hazardous materials are confined within work area					
Access and egress to hazardous area is not blocked					
Emergency contact information posted.					
Access and aisle space exists for chemicals stored in the work area					
Approved work plan and applicable permits are in place for hazardous activity					
PPE specified by work plan is in use					
Any monitoring specified in work plan is being performed					
Personnel in the area are aware of contingency and emergency procedures.					

Other observations/remarks: Action Required: (Action and AR Owner)

APPENDIX Q
SOLID WASTE REDUCTION STRATEGIES
(PAGE 1 OF 2)

(PERFORMED BY GENERAL CONTRACTOR/CONSTRUCTION MANAGER, ALL CONTRACTORS AND SUBCONTRACTORS)

Where applicable the following activities will be implemented to encourage source reduction:

- ___ 1. Alter purchasing practices to reduce waste. Wherever possible, buy supplies in bulk and closely monitor unused supplies.
- ___ 2. In landscaping design, avoid unnecessary clearing of trees. Chip roots and branches onsite.
- ___ 3. Specify in purchase orders that suppliers deliver goods with a minimum of packaging, or require suppliers to remove and handle packaging after delivery (unless packaging reuse value is high).
- ___ 4. Minimize excessive materials used, optimize use of purchased materials.
- ___ 5. Use framing components manufactured offsite.
- ___ 6. Reuse excess lumber in the construction process.
- ___ 7. Ensure that materials are measured to avoid excessive end cuts.
- ___ 8. Secure onsite roll-off boxes to discourage unauthorized dumping.
- ___ 9. Asphalt and concrete wastes (including concrete block) can be ground and crushed onsite. Some reuse options require no processing of crushed material. For example, it can be used for nonstructural fill of berms and lowlands. Asphalt can be crushed and reused for asphalt pavement.
- ___ 10. Waste products can be source separated to produce more marketable loads. Individual bins or boxes should be designated for various types of products.
- ___ 11. Local refuse (drop box) haulers can be good resources for information about how best to recycle different types of wastes.
- ___ 12. Source separation plans can be coordinated with CPM schedules to achieve optimal diversion of wastes. Research on available end-use markets before the project begins can result in good savings.
- ___ 13. Local waste exchange can be contracted to determine what products are in demand for exchange.
- ___ 14. Instructing all onsite personnel regarding appropriate procedures will lead to higher levels of materials recovery. For example, the use of designated containers for holding recovered materials will reduce contamination.

APPENDIX Q
SOLID WASTE REDUCTION STRATEGIES
(PAGE 2 OF 2)

Table 1 provides examples of end-use markets for recycled construction solid waste. Depending on demand, the end-use markets are places that will pay for products or take them for free.

Table 1 End-Use Markets for Recycled Construction Wastes	
Waste Type	End Use
Dirt	Soil, soil conditioner, landscaping
Bricks and tile	Masonry, landscaping, ornamental stone, decorative facades
Concrete, cinder blocks, rocks	Fill, roadbed aggregate, haul roads, masonry use onsite, landscaping
Asphalt	Road/bridge resurfacing, landfill haul roads, asphalt aggregate
Tar-based materials, roofing	Mixed with used asphalt for resurfacing, raw material -- reuse onsite
Ferrous pipes, roofing, flashing	Reused, raw material -- sold as scrap
Aluminum	Remelt, raw material -- sold as scrap
Copper	Reused, raw material -- sold as scrap
Steel, brass	Reused, raw material -- sold as scrap
Stumps, treetops, mixed wood and limbs	Chipped for fuel, landscaping, compost bulking, animal bedding, manufactured building products, haul roads, landscaping, re-use on construction site
Wall studs - other construction-grade lumber	Temporary or permanent framing and general construction
Framing, scraps	Chipped for fuel, landscaping, compost bulking, animal bedding, manufactured building products, landfill haul roads
Plywood, pressure-treated	May or may not be chipped for fuel, landscaping, compost bulking, animal bedding, manufactured building products, concrete forms, floor protection
Creosote-treated, laminates	End use depends on local regulations concerning chemicals in material. If use is approved uses are similar to those for other wood materials (listed above)
Used cardboard	Fuel pellets
Plaster, sheetrock	In place of sand in concrete/aggregate fill - agriculture, gypsum as raw material
Glass	In place of sand in concrete/aggregate

Table 1
End-Use Markets for Recycled Construction Wastes

Waste Type	End Use
White goods/appliances	Scrap recyclers for crushing
Lead paint, asbestos, fiberglass, fuel tanks	None known

APPENDIX R
SOLID WASTE ESTIMATIONS
 (Page 1 of 2)

(PERFORMED BY GENERAL CONTRACTOR/CONSTRUCTION MANAGER OR DESIGNEE)

1. Estimate the weekly volume generated of construction solid waste (in cubic feet) of wood, concrete products, aluminum, ferrous metal, other non-ferrous metal, sheetrock, land clearing waste, plastics, paper, and cardboard.

Two tables are provided as guidance on estimating waste volume that is generated. Table 2 provides guidance on the typical building material content for construction within the United States. Table 3 provides guidance on estimating the density of construction waste materials.

Table 2 Typical Building Content in United States			
Material	Percentage (%)	Volume - Cubic Yard	Density - Pounds per Cubic Yard
Steel and Iron	2.7	0.1	1090
Copper, Brass	>0	Neg	906
Lead	>0	--	--
Aluminum	0.1	--	--
Concrete	53.7	0.9	1190 - 1855
Brick & Clay	--	--	1210 - 3024
Block	21.0	0.3	1210 - 3024
Wood	22.0	1.1	400
Glass	0.2	Neg	--
Plastic	0.1	--	--
Total	100	2.4	830

Based on one ton of waste

APPENDIX R
SOLID WASTE ESTIMATIONS
(PAGE 2 OF 2)

Table 3 Density of Typical Construction Waste Materials (% by Weight)	
Material	Density (Pounds per Cubic Foot)
Steel (Cold drawn)	489
Glass (Common)	162
Timber	38-42
Rubble, Masonry	137-156
Dry Rubble, Masonry	110-130
Brick Masonry	103-128
Earth (Excavated)	63-126
Asphalt	81

2. Estimate the amount of material to be recovered:
 - ___ a. Determine potential amount for re-use at construction site
 - ___ b. Determine volume available for market
 - ___ c. Determine volume available for disposal

- ___ 3. For sustaining operations, determine existing practices, such as recycling programs and goals, separation methods, reuse objectives, contracts with end-use markets, etc.

For green field sites, determine local/regional practices for construction solid waste.

APPENDIX S
DETERMINING SOLID WASTE MANAGEMENT
RETURN ON INVESTMENT

(PERFORMED BY GENERAL CONTRACTOR/CONSTRUCTION MANAGER OR DESIGNEE)

___ 1. Locate markets for wood, asphalt, concrete products, aluminum, ferrous metal, other non-ferrous metal, sheetrock, land clearing waste, plastics, paper, and cardboard. Determine current unit prices and product specifications required for scrap and resale. Contact waste exchanges in the local area to determine needs for these materials.

___ 2. Contact local landfill disposal sites for current rates. Determine raw materials likely to be re-used on the construction site.

___ 3. Estimate labor, material, equipment, hauling, and disposal costs and revenues from reuse and sold recycled materials by waste material type. The following equation can be used to determine which waste products can be recovered economically.

$$[\text{Labor}\$ + \text{Material}\$ + \text{Equipment}\$ + \text{Hauling}\$ - \text{Disposal Cost}\$ \leq \text{Market Price}]$$

For re-use of raw materials, cost would be determined as replacement cost.

___ 4. Determine if waste material will contain any Hazardous Materials per the Hazardous Material Control Plan. If no hazardous materials are contained within the solid waste material, go to step 6.

If hazardous materials are within the solid waste, determine if these materials meet the definition of hazardous waste per the Hazardous Waste Management Plan. If the solid waste does not contain hazardous waste, go to step 6.

___ 5. If the solid waste material contains hazardous waste, process the hazardous waste in accordance with the Hazardous Waste Management Plan.

___ 6. Issue purchase orders and contracts for construction solid waste processing, storage (roll-off boxes, bins), transportation, end-use markets, and final disposal.

APPENDIX T
SOLID WASTE DISPOSITION
(PAGE 1 OF 3)

(PERFORMED BY GENERAL CONTRACTOR/CONSTRUCTION MANAGER OR DESIGNEE)

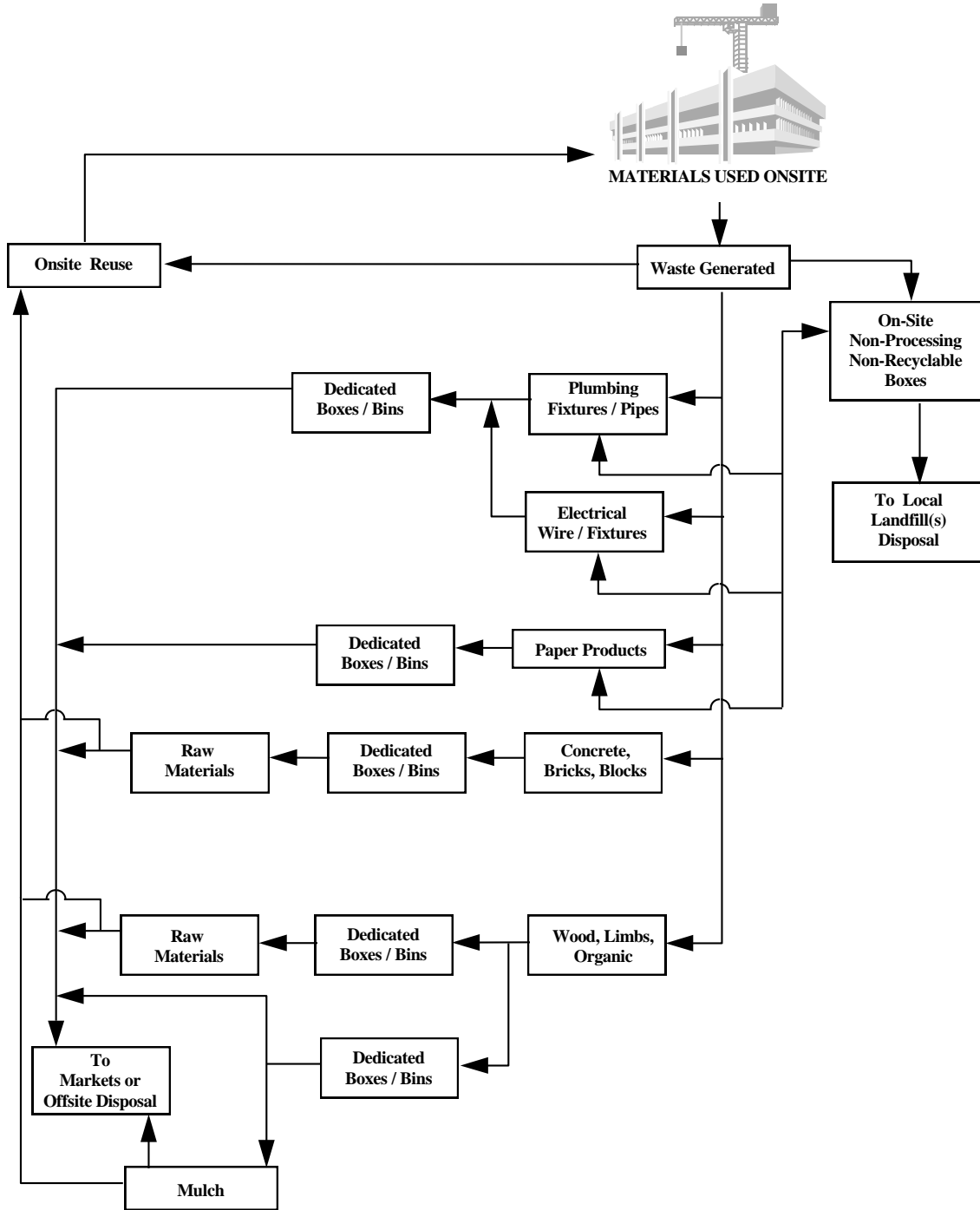
- ___ 1. Determine onsite locations for solid waste bins, boxes, and staging areas.
- ___ 2. Provide signs on bins or containers describing specific materials to be recovered.
- ___ 3. To ensure all contractors and subcontractors are aware of both requirements and resources available for implementing the Solid Waste Management Plan, the General Manager will perform the following:
 - Communicate location of materials, methods of solid waste separation and processes, locate storage areas, including bins and boxes.
 - Define the responsibilities of contractors and subcontractors in regards to reusing, recycling and disposing of waste materials.

(PERFORMED BY GENERAL CONTRACTOR/CONSTRUCTION MANAGER OR SUBCONTRACTORS AS DETERMINED BY GC)

- ___ 4. Implement waste disposition by ensuring waste material is segregated for reuse, recycling or disposal. Figure 2 provides an illustration of waste streams for the disposition of solid waste.

APPENDIX T
SOLID WASTE DISPOSITION - FIGURE 2
(PAGE 2 OF 3)

SOLID WASTE DISPOSITION
Wastestreams



APPENDIX T
SOLID WASTE REPORTING FORM - FIGURE 3
(PAGE 3 OF 3)

Year	Project	CATEGORY	January	February	March
2014	Project Name	Fiber Recycled (tons (2000 lbs per ton))			
2014	Project Name	Paper Recycled (tons (2000 lbs per ton))			
2014	Project Name	Cardboard Recycled (tons (2000 lbs per ton))			
2014	Project Name	Comingled Recycled waste (tons (2000 lbs per ton)) (defined per site in the definitions)			
2014	Project Name	Metal Recycled (tons (2000 lbs per ton))			
2014	Project Name	Plastic Recycled (tons (2000 lbs per ton))			
2014	Project Name	Wood Recycled (tons (2000 lbs per ton))			
2014	Project Name	E-Waste Recycled (tons (2000 lbs per ton))			
2014	Project Name	Glass Recycled (tons (2000 lbs per ton))			
2014	Project Name	Organics Recycled (tons (2000 lbs per ton))			
2014	Project Name	Other Recycled (tons (2000 lbs per ton)) – concrete, asphalt, etc.			
2014	Project Name	Solid Waste Donations (tons (2000 lbs per ton))			
2014	Project Name	Total Landfilled (tons (2000 lbs per ton))			
2014	Project Name	Total Recycled (tons (2000 lbs per ton))			
2014	Project Name	Total Incinerated (tons (2000 lbs per ton))			
2014	Project Name	Total Burned for Energy (tons (2000 lbs per ton))			
2014	Project Name	Revenue Generated (\$)			

APPENDIX U
SITE PLANNING ACTIVITIES CHECKLIST

1. Identify if the project will involve any activities that generate significant amounts of wastewater or potentially have an adverse environmental effect. Mark each activity identified below.

Site preparation or earthwork

Mobile equipment washing or cleanout

Washing of structures or equipment

Leak testing, flushing, passivation

Dewatering subsurface soils

(Other)

2. Identify Site and adjacent water features below that could be impacted by construction activities:

Wetlands

Creek, river, lake, drainage ditch

Supply or monitoring wells

During the construction project, 5 acres or more will be disturbed

(Other)

3. Establish erosion control and sediment control plan.

Plan established

General Contractor/Construction Manager review of the plan

Intel review/approval of the plan

4. Determine what agency approvals, permits or notifications are required for any of the activities listed above.

NPDES Storm Water Construction Permit (Required if 5 acres or more will be disturbed)

5. Identify owner for each permit and ensure required permits are obtained.

Permit _____ Owner _____

Application initiated _____ Application reviewed by: GC _____ Intel _____

Application submitted _____ Permit Issued _____

Permit _____ Owner _____

Application initiated _____ Application reviewed by: GC _____ Intel _____

Application submitted _____ Permit Issued _____

Permit _____ Owner _____

Application initiated _____ Application reviewed by: GC _____ Intel _____

Application submitted _____ Permit Issued _____

Permit _____ Owner _____

Application initiated _____ Application reviewed by: GC _____ Intel _____

Application submitted _____ Permit Issued _____

6. Verify the necessary performance controls been established, such as:

___ Indicators to monitor and demonstrate compliance with the Wastewater and Storm Water Management Plan

___ Log books required to record inspections

___ Inspection criteria has been established and owner identified

APPENDIX V

AREA PREPARATION FOR EROSION/SEDIMENT CONTROL CHECKLIST

Requirements for erosion and sediment control measures are specified in the Storm Water Pollution Prevention Plan.

1. Read the construction Storm Water Pollution Prevention Plan
2. Ensure erosion control measures have been established as specified by the plan. These measures may include:

Required In Place

Vegetative buffers _____

Mulching _____

Netting/mats/blankets _____

Temporary seeding _____

Permanent seeding _____

Sod stabilization on stock or spoil piles of dirt _____

Cuts into the sides of earth embankments _____

Sloping earth surfaces _____

3. Ensure sediment control measures have been established as specified by the plan. These measures may include:

Required In Place

Silt fencing _____

Straw bales/bio bales _____

Sediment traps _____

Sediment basins _____

Storm inlet protection _____

Drainage swales _____

Check dams _____

Contour furrows _____

Terracing _____

Pipe slope drains _____

Rock outlet protection to protect the sediment from entering into creeks, rivers, lakes, storm sewers or drainage ditches _____

4. Verify inspection plans have been established to ensure control measures are effective.

APPENDIX W

AREA PREPARATION FOR MOBILE EQUIPMENT WASHING & CLEANING CHECKLIST

___1. Verify Areas have been designated by Intel’s Construction EHS or site EHS personnel for washing and cleaning of mobile equipment.

Verify that each location has been:

___ Established where resulting wastewater will not enter onsite or offsite creeks, wetlands, rivers, lakes or drainage ditches.

___ Designed so the resulting wastewater will not be discharged into the storm sewer system.

___ Lined to prevent construction debris from contaminating soil

___ Large enough to hold wash water and precipitation (if applicable) long enough to be tested and permitted for discharge to either sanitary sewer system or off-site disposal site. Note: all discharges to sanitary sewer or off-site must be arranged through Intel’s Construction EHS or Site EHS personnel.

___ Posted in conspicuous location

___2. Verify that washing and cleanout areas and usage procedures have been communicated to truck drivers and other individuals expected to use each area.

APPENDIX X

AREA PREPARATION FOR SMALL EQUIPMENT WASHING & CLEANING CHECKLIST

___1. Verify areas have been established for washing and cleaning small equipment.

Verify that each location has been:

___ Established where resulting wastewater will not enter onsite or offsite creeks, wetlands, rivers, lakes or drainage ditches.

___ Designed so the resulting wastewater will not come into contact with soil.

___ Posted in conspicuous location

___2. Verify that washing and cleanout areas and usage procedures have been communicated to truck drivers and other individuals expected to use each area

___3. Water-based paint waste and clean up liquids should be placed in containers, with remaining liquids shipped off site in manner approved by Intel.

___4. Waste liquids containing petroleum or oil based cleaners, solvents, mineral spirits are not to be disposed on the ground. These liquids are to be placed in approved containers and managed as a waste for offsite disposal that must be approved by Intel.

APPENDIX Y

AREA PREPARATION FOR LEAK TESTING, FLUSHING, & PASSIVATION OF SYSTEMS CHECKLIST

1. Review construction and start-up plans to identify where flushing and leak testing or passivation (chemical treatment) required before placing a system in service. Systems include:

Fire protection

Potable water

Ultra pure water

Boiler hot water/steam

Chilled water

Condenser/cooling tower

Wet scrubber

Wastewater collection/treatment

2. If any of the activities discussed above have been identified, then verify the following control measures been established?

A place to collect and either store or dispose of these wastewater has been established. This requires not only physical provisions to manage these waters but also requires having the necessary approval(s) from the local agency if these waters are to be discharged off site.

If the wastewater contains detergents, biocides, corrosion inhibitors or other additives, depending on where this wastewater will be discharged may not be acceptable without further dilution or treatment.

APPENDIX Z

AREA PREPARATION FOR DEWATERING SUBSURFACE SOILS CHECKLIST

- ___1. If dewatering of subsurface soils is required, there is a place to pump this water for either onsite retention or offsite disposal.

- ___2. If there had been a preexisting site condition that resulted in the site's groundwater becoming contaminated, have the options for the management of this water been reviewed with Construction EHS or Site EHS personnel?

- ___3. Verify with Construction EHS or Site EHS personnel that all state or local requirements regarding the management of dewatering water that will dictate how these waters will be stored and disposed have been met.

- ___4. Ensure there are adequate provisions to store and discharge the dewatering waters so as not to cause
either onsite or offsite flooding, erosion and sediment control issues.

APPENDIX AA
EROSION/SEDIMENT CONTROL SAMPLE INSPECTION LOG

Inspector Name	Inspection Date/Time	Current Weather conditions	Erosion/Sediment Control Deficiencies Identified	AR Owner: Name Date / Time

Intel VF tool scrapping policy

Rev 1.3

Table of Contents

Introduction..... 116

1. Define Scope (6D Spoc/CSC PM) 116

2. Hazardous material management (6D Spoc/site EHS) 116

3. IP removal (6D Spoc/Tool Owner)..... 117

4. Identification removal (6D Spoc/Tool Owner) 117

5. Precious Metals (6D Spoc/Tool Owner)..... 117

6. Crated Tools (6D Spoc)..... 117

7. Qualified Recycle Supplier (CSC) 117

8. COD requirements (Qualified Scrap Supplier) 118

9. Documentation and Close out (6D SPOC/Tool owner/EMS owner)..... 118

10. Reference Documents..... 118

Appendix A - Steps for characterizing wasteError! Bookmark not defined.

Appendix B - Basic Flow for Solid Waste.....Error! Bookmark not defined.

Appendix C – Scrap Tool Process FlowError! Bookmark not defined.

Appendix D – Repositories and Change Control process.....Error! Bookmark not defined.

Revision History.....Error! Bookmark not defined.

Introduction

The recycling process for tools begins at the time of retirement in Equipment Management System (EMS) to “scrap”. The policy also covers recycling incomplete tools and parts. The following steps need to be followed for recycling either directly from the floor or from a warehouse to ensure IP and hazardous waste are properly managed. The tasks can be delegated as appropriate at your site but must all be completed. For tools, assure the 6D process through DSL2 is complete. If there is any concern contact the site 6D SPOC for mitigation plan. The 6D contacts list is located at:https://sharepoint.amr.ith.intel.com/sites/FSATBO/FSATBO_Capital_Management/6D_Program/SitePages/Home.aspx

1. Define Scope (6D Spoc/CSC PM)

- a. Project assessment
- b. Perform hazard characterization Appendix A.
- c. Location to uncrate tool if needed
- d. Resources to perform required actions
- e. Secure funding

2. Hazardous material management (6D Spoc/site EHS)

If the tool contains refrigerant (i.e. Freon), Oil, Printed Circuit Boards, batteries, light bulbs (fluorescent lights), lead panels, e-waste or any other material that cannot be disposed of in a land fill it must be removed and recycled appropriately.

- a. Follow the EHS VF Decontamination guideline <http://ehs.intel.com/ih/decon.htm>, Appendix A - Steps for characterizing waste and your site's Waste Disposal matrix.
- b. Follow the EHS VF Decontamination guideline <http://ehs.intel.com/ih/decon.htm>, Appendix A - Steps for characterizing waste and your site's Waste Disposal matrix.

3. IP removal (6D Spoc/Tool Owner)

- a. Follow the VF Tool HDD policy for Information Security IP.

4. Identification removal (6D Spoc/Tool Owner)

- a. Before a tool or part is sent to recycle any labels, identification stickers, name plates, etc added to the tool after it first arrived at Intel must be removed to insure if the tool/parts do not complete destruction they are not associated to Intel.
- b. Is the right-to-know labeling on the tool "normal" for the use of the tool?
 - i. If yes, leave labels intact, only removing tool identification labels.
 - ii. If no, deface special use labels in such a way that they cannot be read. If components contained hazardous materials, re-label at both ends and penetrations with the chemical class of the material i.e. Corrosive, Corrosive oxidizer, Solvent, etc.

5. Precious Metals (6D Spoc/Tool Owner)

Are there precious metals in the tool/part; gold, silver, platinum, titanium, etc?

- a. The Intel Resale Corp. (IRC) Precious Metals Reclaim business group is responsible for the worldwide product reclaim of precious and high value metals from component-level or factory equipment or materials scrap.
- b. Contact Intel Resale Corporation for the *current* list of precious metals and follow site process to determine the location for disposing of precious metals,
- c. Contact an Intel tool expert to determine if any of the precious metals on the list are present.

6. Crated Tools (6D Spoc)

- a. If crated tools and parts must be opened to prepare for recycle, use the crate opening checklist (Appendix D of the Crating Spec).
- b. Prepare appropriately for tools that may contain residual chemicals or other hazards (acid benches may leech during storage).
- c. If required, initiate funding for crate removal, forklift/operator for the scrap effort.
- d. If there is any concern with tool (such as no CUDL or checklist) contact 6D SPOC and EHS to define mitigation plan for tool.
- e. All Intel identification labels i.e etag, Tool ID, CUDLS, component tags, etc. must be removed.

7. Qualified Recycle Supplier (CSC)

- a. Only use an Intel Contracted Recycle Supplier for scrapping Intel tools and equipment. Certificate of Destruction (COD) for Main Body and Process Chambers is required by Intel to assure a complete tool is not sold on secondary market.

- b. Contact recycler and ensure that they are capable to handle the material you are sending to scrap. Supplier shall comply with Intel Construction EHS Processes and Procedures Manual for proper disposition of Hazardous Material and Solid Waste.
- c. If mitigation is required such as additional decontamination, then use an approved supplier to mitigate hazards following requirements for hazardous shipment as needed.
- d. If scrap supplier receives crated tools all Intel identification labels i.e etag, Tool ID, CUDLS, component tags, etc will be removed. See item 4.

8. COD requirements (Qualified Scrap Supplier)

- a. All items sent to Recycler will have an [Intel label to Scrap Tools](#) indicating which parts require a COD. Carrier will not pick up material from Intel dock without the label and no action will be taken by recycle supplier without that document.
- b. Tool Main Body and Process Chambers shall be destroyed by supplier rendered useless with-in 30 days of receipt. For all tool Main Body, supplier shall record a Certificate of Destruction (COD) and will keep on file and available to Intel upon request. COD will be retained by supplier for 5 years.
- c. The Certificate of Destruction (COD) is defined as a document stating that the recycler has destroyed and rendered the tool useless and will not reuse or sell any tool parts other than to recover scrap metal or plastic. Each COD must be signed by the authorized Recycler employee that oversaw the destruction and the COD must contain the following:
 - i. Serial number
 - ii. Intel Tool ID or Entity Code
 - iii. UEID (Unique equipment identifier)
 - iv. Date the destruction was completed
- d. All parts shall be recycled per Intel Global Waste Program Standards.

9. Documentation and Close out (6D SPOC/Tool owner/EMS owner)

- a. CODs will be retained by supplier as required in the [Intel label to Scrap Tools](#).
- b. The 6D SPOC/Tool owner will assure the Intel label to Scrap Tools is attached to crates or components.
- c. 6D SPOC will email Capitol Storage Coordinator with authorization to release tool to scrap supplier.
- d. Scrap Supplier will email scraptoolinactivate@intel.com notification within 7 days of tool receipt. Notice will include EMS UEID, Date Received and COD requirement as found on the Intel label to Scrap Tools.

10. Reference Documents

[Intel EHS Construction management process \(CMP\)](#)

[EHS VF Decontamination Guidelines](#)

[6D SOP](#)

[VF Tool HDD Policy](#)

[IRC Precious Metals Reclaim](#)

[Global Waste program Standard](#)

Site Waste Disposal matrix

Appendix A - Steps for characterizing waste

Fab and Assembly Test Manufacturing Equipment (tools and parts) – The Equipment, Parts and Facility Decontamination program and Virtual Factory (VF) Decontamination and eCUDL (Chemical Used Decontamination Label) standard provide an overview for managing these items. The factories maintain an asset database and reuse/retirement roadmap. Fab tool asset managers work with the IRC [Asset Investment Recovery \(AIR\)](#) to identify resale opportunities prior to scrapping tools and parts. Once tools and parts have been identified for scrap, owners work with EHS to profile items for recycle or disposal.

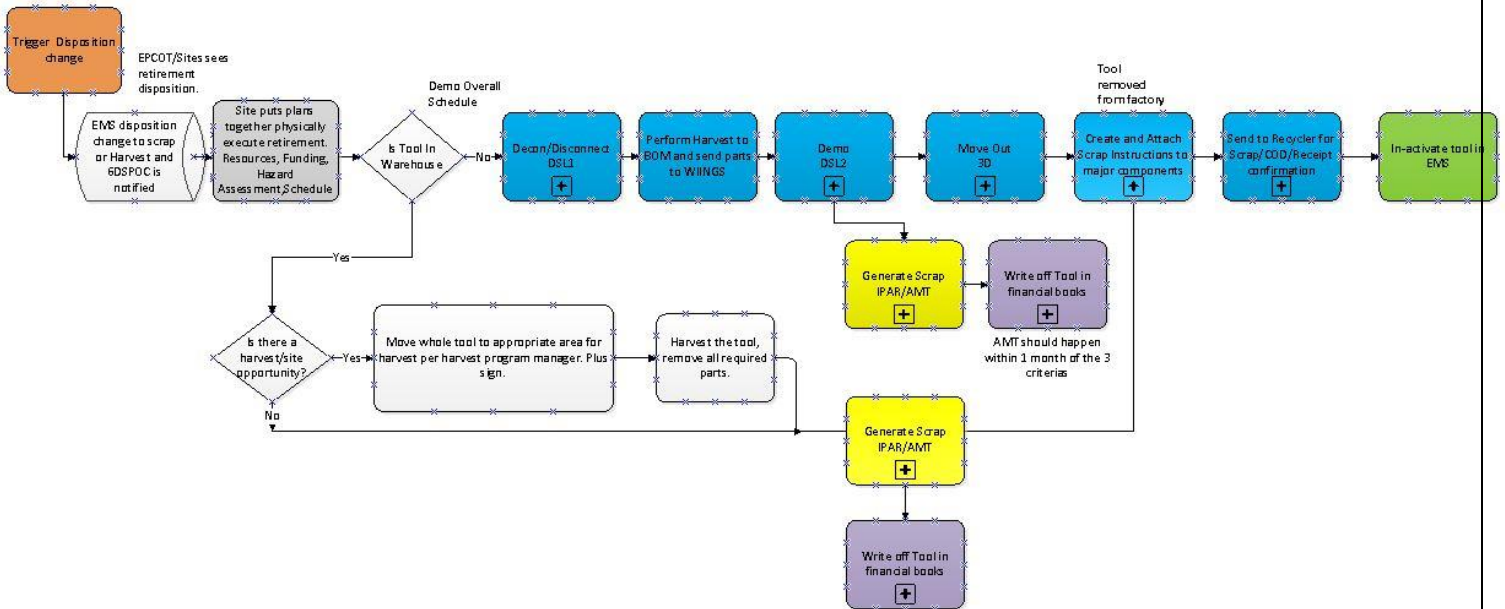
- 1) FSM Tool owner to provide the Site Environmental Engineer that owns the waste program in the campus the tool is located and is RCRA trained the following information:
 - a. What is the tool
 - b. What are the chemicals remaining in each module and the amount in mg if possible
 - c. Are there filters
 - d. Are there batteries
 - e. Are there lamps
 - f. Are there Printed Circuit Boards
 - g. What is the chemical residue and the amount in mg left in the pumps/forelines/etc.
 - h. What is the tool made of per module (metal, plastic, precious metals, etc.)
 - i. eCUDLs
- 2) The Site Environmental Engineer makes the waste determination utilizing the Global Waste Program Standard Generator Process Knowledge Form.
 - a. Hazardous Waste
 - b. State Regulated Waste
 - c. Universal Waste
 - d. Chemical Debris/Waste
 - e. Non hazardous scrap
- 3) **KEY NOTE:** If a tool is a hazardous waste upon designation as a waste, then there are strict time limits for the parts/filters/pumps that are a hazardous waste must be removed offsite to a TSDF within 90 days. This is the maximum in the USA. If it's a universal waste we may have up to 1 year for removal – lamps and batteries.
- 4) The Site Environmental Engineer provide documentation to FSM/Project Management
 - a. If a waste is a regulated waste then this must be shipped via an Intel Haz Mat Shipper as a regulated waste unless 3rd Party Haz Mat Shipper is approved by CPLG Haz Mat Expert.

- 5) Project Management (FSM and CSC) to define resources and quantify the costs of the following options
 - a. Scrap or harvest onsite to lessen chemical waste disposal
 - b. Total tools as Chemical waste
 - c. Selective Decon
- 6) As part of the project, the project will have to hire Environmental compliance support (Scientists or engineers (green badge)) to support the projects.

Appendix B - Basic Flow for Solid Waste

1. Intel's facility sustaining property management company owns the sustaining dumpsters
2. Intel's facility sustaining property management company has contracts with waste management companies ie scrap metal to take the sustaining wastes.
3. For Projects there are 2 options:
 - a. Projects places a PO to Intel's facility sustaining property management company and manage the solid waste ie scrap tools
 - b. Projects places a PO to their own waste management firm to manage the waste.
 - i. Projects must now have Global Solid Waste Program Owner and CSC 6D Point of Contact review.
 - ii. The revenue generated by the tool recycling must go to the Intel account per normal process.
 - iii. A certificate of destruction must be supplied for each and every tool main body and entire tool.
4. Contractor to use only Intel qualified Scrap Suppliers for Scrap SOW

Appendix C – Scrap Tool Process Flow



Appendix D – Repositories and Change Control process

Repositories

6D Program Share point Site – internal to Intel (blue and cw)

Supplier.Intel.com – external to Intel (Contractors and Scrap suppliers)

Changes to Specs must be uploaded to both repositories.

Spec Owner and change control

Andrew Ulibarri - CSC

Andrew Giomi – FCP/6D

6D WG

Revision History

Rev 1.0 Combined Policy with Appendices A & B 01JUL2014

Rev 1.2 Added Appendices C & D 14JUL2014

Rev 1.3 Updated scrap supplier email link 16JUL2014

Added 6D SPOC email authorization to CSC

