Registration Pursuant To Section 43.4(B) of the Environmental Assessment Regulations 2000

QMAX Building
Donovan's Industrial Park
Mount Pearl

November 21, 2002

PROPONENT:

(i) **Name of Corporate Body**:

QMAX Solutions Inc.

(ii) **Address:**

#1700, 407 - 2nd Street S.W.
Calgary, Alberta
Canada
T2P 2Y3

(iii) **Principal Contacts for the Purpose of Environmental Concerns**:

QMAX Solutions Inc.

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Official Title: Managing Partner

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Name: Bill Noseworthy

Official Title: Engineering Project Manager

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(i) **Geographic Location**

- #30 Kyle Avenue
  Donovan's Industrial Park
  Mount Pearl, Newfoundland & Labrador

  The map titled "Site Location Plan" (CSK-3) is attached.

(ii) **General Description**

- **Site Development** - The attached sketch titled "Site Development Plan" (SK-1) shows the proposed layout for the site.

- **Size of Storage tanks and construction standards** - Storage tank dimensions would be 20' high, 12' in diameter and would hold 400 bbls. (60m^3) each. Steel tanks are to be constructed to API 650 standards. Total storage capacity for 10 tanks = 600 m^3 (600,000 litres). Future expansion could increase this capacity to 14 tanks = 840 m^3 (840,000 litres).

- **Description of secondary containment dyke -** The dyke is of reinforced concrete with sumps for controlled removal of any spillage. Details are shown on the attached sketch SK-7. Any spillage would be reused or removed by licensed disposal tanker truck.

- **Estimated volume of drilling fluid/mud to be processed** - Q'Max expects to process approximately 300 m^3 of drilling fluid for the initial Whiterose well. This fluid would then be returned to the facility for storage and possible reconditioning for use on the subsequent well. Above and beyond the initial formulation, Q'Max expects to have to formulate 100-150 m^3 of additional volume per well. Husky expects to drill approximately 6 wells per year. The additional storage may be required if Husky deems it beneficial to separate the different density fluids. Different density fluids are required at various depths throughout the drilling process and is controlled with the addition of Barite. If this becomes a requirement then the volumes mentioned above would double as two systems would be run simultaneously. It is not anticipated that this would increase the storage capacity beyond the total of 14 tanks planned for the dyke.

- **Description of air emissions/odours from mixing process, methods to be used, containment equipment/procedures** - The mixing tank will have a canopy with walls extending down to the tank to provide protection from the elements to both the workers and the products handled. This will prevent dry products from being carried by the wind to surrounding properties. The mixing process would begin with the transfer of oil to the mixing tank. This oil is a low toxicity mineral oil chosen specifically for its characteristically low aromatic content. It has a very slight odour which is confined to the immediate mixing area. Measurements taken at similar facilities indicate that breathing apparatus is not required while mixing this fluid. Standard safety procedures would include goggles, boots, gloves and apron for employees involved in the handling of the fluid. An air monitoring process will be included in our HSE program. When the oil has been transferred to the mixing tank, emulsifiers are taken from the warehouse and added through a mixing apparatus called a hopper. Salt water (previously mixed at the same facility) is added to the oil and emulsified. A viscosifying powder may also be added depending on the property requirements for the particular well being drilled. All mixing occurs inside the containment berm. The readied fluid would then be shipped to dockside for transport to the offshore drilling rig. Containment equipment would include a cement berm and floor, catch sumps inside the berm for runoff, overflow meters and check valves on tanks and a spill containment loading/offloading system. Actual procedures will be developed after the facilities are in place to ensure continuity for our Health Safety Environment (HSE) Program and ISO certification. An emergency response plan would be included with this process. Building procedures ahead of facilities would exaggerate inaccuracies. A comprehensive HSE program as well as a quality control process are basic Husky requirements of their suppliers. Audits are performed regularly.

- **Description of any other operations including cleaning or reconditioning used drilling fluids** - The vast majority of fluid conditioning is performed at the rig site by Q'Max technicians. The fluid arrives at the site within spec and is returned to our facility for storage within spec. There will be occasions however when specifications will change and therefore reconditioning will be required at the plant. This may entail minor chemical additions or on a larger scale solids being centrifuged out of the fluid. When this occurs these solids will have the mineral oil attached to them and must be disposed of according to environmental regulations. Q'Max has hired Crosbie Industrial to handle any waste products generated at our plant. Because the fluids are reused the only potential waste stream would be if the above mentioned centrifuging is required. Cleaning of the tanks will not be required as the fluids will have consistent properties.

- **Storm sewer locations -** The attached drawing C2 – "Site Development Plan" shows the storm sewer locations.

- **Other dimensions of site**- The attached drawing C2 – "Site Development Plan" shows other dimensions of the site. The site is located in Donovan's Industrial Park which is zoned industrial. The area will have to be cleared and the City of Mount Pearl will have to issue a permit.

(iii) **Construction**

(a) **Construction Schedule:**

The site is to be developed and the building constructed by the summer of 2003.

(b) **Construction Activities**:

The construction activities associated with this project will be no different than any other office or warehouse constructed in Newfoundland and Labrador.

The activities include:

- Surveying
- Brush Clearing
- Excavation & Filling
- Water & Sewer
- Pavement
- Concrete & Masonry
- Steel
- Architectural Finishes
- Mechanical Services
- Electrical Services

(c) **Potential Sources of Pollutants:**

The potential sources of pollutants during the construction period would be no different than those encountered on other construction projects in Newfoundland and Labrador. The Contractors involved with construction will be required to adhere to Environmental regulations for the disposal of all materials. The requirements for inspection of heavy equipment for hydraulic fluids or hydrocarbon leaks and the removal of mud prior to driving on pavement will be as per the City of Mount Pearl's regulations.

(iv) **Operation:**

The expected operating life of the facility is a minimum of 20 years.

(a) **Potential Source of Pollutants:**

Potential sources of pollutants as listed below will be limited to those components which will be used to produce the drilling fluid. The components arrive on site in packages and containers and are stored in the warehouse unopened. As required, these components are moved by forklift to a rectangular mixing tank. This tank, along with 10 cylindrical storage tanks, are contained within a concrete dyke which is designed to hold spillage and leaks for controlled clean up. All equipment will be inspected routinely to ensure that no leaks occur.

.1 **List of Products to be Stored in Warehouse**

See list on following page.

.2 **List of Products to be Stored in Containers Outside**

Barite ($BaSO_4$)
Bentonite

(b) **Operation:**

Certain products to be used in the production of drilling fluids will be delivered by transport trucks to the site in packages and containers. These products will be stored unopened in the warehouse. When required, the products will be moved by forklift to the mixing tank contained in the concrete dyke. These products will then be mixed with salt water and oil held in separate cylindrical storage tanks within the dyke. This mixture will then be transferred to the other cylindrical storage tanks contained within the dyke. Tankers will then load the product for transportation to the harbour front and delivery to the White Rose project. Speed bumps will be installed on the tanker ramp to contain any spills during loading/unloading of the product.

The operation will employ a Manager, Secretary, two or three other office staff and two warehouse workers. The warehouse will have two loading bays and a drive through for receiving products at the warehouse. The warehouse will **not** be connected to the City storm or sewer system.

Description of solid waste management practices (storage, disposal of hazardous products, packaging, etc.) - Q'Max will be supplying Husky with product in three (3) forms. Premixed liquid as previously described, bulk Barite and Bentonite in powder form transported by pressured trailer units and packaged materials that are palletized, double wrapped and placed in water tight containers for shipment offshore. The vast majority of products handled by Q'Max at the warehouse facility are never removed from their package. The operator receives these products at dockside and are then responsible for the disposal of packaging after use in accordance with CNOPB guidelines. Materials, wherever possible are packaged in reusable/recyclable containers. Plastic 20 litre pails and plastic/metal 200 litre drums of liquid products are reused or recycled if in poor condition. Liquid emulsifiers used by Q'Max are received in concentrated form and then diluted to allow for the reuse of drums. Storage and handling

Product Name	Siz	Chemical Function	WHMIS Classification		TDG Classificatio
ALCOMER 110RD	25.0 KG	PHPA Encapsulator/Flocculant	Non Hazardous		
BARAGEL 3000	22.7 KG	Invert Viscosifie	D-2A	potential carcinogen, contains free silica	
BARITE	40.0 KG	Weighting Agent	Non Hazardous		
BICARBONATE OF SODA	22.7 KG	Calcium Sequestor	Non Hazardous		
CaCO3 "325"	25.0 KG	Weighting Agent	Non Hazardous		
CaCO3 "O"	25.0 KG	Bridging Agent	Non Hazardous		
CaCO3 POULTRY GRIT	25.0 KG	Bridging Agent	Non Hazardous		
CaCO3 SUPERCAL	25.0 KG	Bridging Agent	Non Hazardous		
CALCIUM CHLORIDE FINES	40.0 KG	High Grade Calcium Source (Invert)	D-2B	skin and eye irritant	
CANFREE	208.0 L	Hydrocarbon Based Spotting Fluid	B-3, D-2B	combustible, skin and eye irritant	
CAUSTIC SODA	25.0 KG	Alkalinity Control	E, D-1B	corrosive and poisonous	8
CELLOPHANE/POL-E-FLAKE	11.4 KG	Lost Circulation Material	Non Hazardous		
CITRIC ACID	25.0 KG	PH Reducer	D-2B	skin and eye irritant	
DESCO	11.4 KG	Thinner	D-2A, D-2B	potential carcinogen, skin and eye irritant	
DRILLING DETERGENT L	20.0 L	Surfactant	D-2B	skin and eye irritant	
DRILLSTAR HT	22.7 KG	Starch Fluid Loss Reducer	Non Hazardous		
DRISPAC SUPER LO	22.7 KG	Fluid Loss Reducer	Non Hazardous		
EZ DRILL	208.0 L	Biodegradable Lubricant	Non Hazardous		
GYPSUM	25.0 KG	Calcium Source	Non Hazardous		
HEC 10	22.7 KG	Cellulosic Viscosifier	Non Hazardous		
HIGH YIELD GEL	22.7 KG	Bentonite	D-2A	potential carcinogen, contains free silica	
HOT LIME (QUICK LIME)	25.0 KG	Emulsifier Activator	E	corrosive	
HP GUAR	22.7 KG	Non-Thixotropic Viscosifier	Non Hazardous		
KCL (POTASH)	25.0 KG	Potassium Source	Non Hazardous		
KELZAN XCD	25.0 KG	Xanthan Gum Viscosifier	Non Hazardous		
KWIK SEAL M	18.2 KG	Lost Circulation Control Material	Non Hazardous		
LIGNITE	22.7 KG	Fluid Loss Reducer	D-2A	potential carcinogen, contains free silica	
LIME	20.0 KG	pH Control/Calcium Source	E, D-2A	corrosive, materials causing other toxic effects	
NATURAL GEL	40.0 KG	Non-Peptized Clay Viscosifier	D-2A	potential carcinogen, contains free silica	
Q'FLOW	208.0 L	Polyethylene Glycol Shale Stabilizer	D-2B	skin and eye irritant	
Q'MUL I	200.0 L	Primary Emulsifier	D-2B	skin and eye irritant	
Q'MUL II	200.0 L	Secondary Emulsifier	D-2B	skin and eye irritant	
Q'PAC REGULAR	22.7 KG	Fluid Loss Reducer	Non Hazardous		
Q'STOP C (ULTRA SEAL C)	11.4 KG	Cellulose Seepage/Stability Control	Non Hazardous		
Q'STOP F (ULTRA SEAL XP)	11.4 KG	Cellulose Seepage/Stability Control	Non Hazardous		
Q'STOP P (ULTRA SEAL PLUS)	12.4 KG	Cellulose Seepage/Stability Control	Non Hazardous		
Q'WET	200.0 L	Oil Wetting Agent	D-2B	skin and eye irritant	
SAPP	22.7 KG	Thinner	Non Hazardous		
SAWDUST	18.2 KG	Lost Circulation Control	Non Hazardous		
SODA ASH	25.0 KG	Calcium Sequester	Non Hazardous		
SODIUM SULPHITE	22.7 KG	Oxygen Scavenger	D-2B	skin and eye irritant	
VERSAMOD	208.0 L	Invert Rheology Modifier	B-3	combustible	
ZINC CARBONATE*	25.0 KG	H2S Scavenger	Non Hazardous		9

of products while in the care of Q'Max is strictly governed by WHMIS, TDG and OH & S regulatory bodies. All Q'Max East Coast personnel are required, as a minimum to have training in WHMIS, TDG, First Aid and Hazard Identification to ensure proper handling of materials. The bulk materials (Barite and Bentonite) eliminate the need for packaging thus reducing pressure on our landfills. Because they are handled through pressured vessels dust control methods are employed to minimize exposure to the employees and the community. A stationary dust containment pod will be employed at the warehouse bulk storage facility. Barite is an inert material and considered non-hazardous, Bentonite has the potential to contain free silica and as such is designated as a hazardous substance. Although we do not want to underestimate any potential toxicant, it should be noted that regulations require only a filter style dust mask when handling this product, a good indication of the level of risk. It should also be noted that bulk form materials produce less exposure than liberated bagged materials. All products to be used for this project undergo an evaluation process in adherence to the "Chemical Management System." This system is a risk analysis developed jointly by Husky and the CNOPB.

Estimated shipping schedule - Q'Max is estimating approximately 30 shipments per month on average. Busy periods would be at the start and end of each well (each well is approximately 60 days duration) and can also be dependant on supply boat schedules. Some days could see 4-5 shipments and then zero activity for the rest of the week. Shipments would be a mix of Oceanex containers, tractor trailers and bulk trucks. There will also be minor traffic movements from the 7 Q'Max employees.

(c) **Occupations:**

The occupations required to operate this facility are:

- Office Manager
- Secretary
- 2 or 3 other Office Staff
- 2 Warehouse Workers

(v) **Approvals for the Undertaking:**

The following is a list of permits, approvals and authorizations, which may be necessary for the proposed project:

(a) Release of the Undertaking under the Environmental Assessment Regulations – issued by the Minister of the Department of Environment;

(b) Department of Government Services and Lands;

(c) City of Mount Pearl.

(vi) **Funding:**

This project is privately funded.