

# RAI Response for Oil Well Permit Application 1366

Submitted to: Florida Department of Environmental Protection



Prepared by:

The Carol Group, Inc.



Century Oil Co., Inc.



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October 16, 2015

1. **Department rule requires that an application to drill be considered incomplete until the applicant requests a preliminary site inspection be made by the Department. Please contact the oil and gas program to schedule a preliminary site inspection. [62C-26.003(4), F.A.C.]**

A preliminary site inspection occurred on Tuesday August 18, 2015. Representatives of FDEP Oil and Gas Section, Florida Fish and Wildlife Conservation Commission and The Carol Group were present.

2. **Florida law requires the department to consider the proven or indicated likelihood of the presence of oil, gas, or related minerals in such quantities as to warrant the exploration and extraction of such products on a commercially profitable basis. The application states that the proposal to drill is “based on geologic information” and that the “primary geological objective is the Upper Sunniland Formation” at a depth of 11,800 feet TVD, but otherwise appears silent on the proven or indicated likelihood of extracting oil at the proposed location and proposed depth. Please provide information that supports the proposal and addresses this consideration. [377.241(3), F.S.]**

A technical report supporting the exploration and extraction of oil at the proposed location is included as **Attachment 2(a)**. *This report is a trade secret, confidential, and exempt from public records law as provided in Sections 812.081, 815.04(3), and 815.045, Florida Statutes.,.* Please redact this information accordingly, and limit its disclosure only to those employees of the Department who need to see it in order to evaluate our response to this request.

Also included as **Attachment 2(b)** is a table of the existing oil and gas fields in Florida, with the approximate depth of each field. Of the fourteen oil fields in the Upper Sunniland Formation, the approximate depth ranges between 11,460 feet and 11,985 feet – more than two miles below ground.

The Sunniland Trend is an oil-bearing geological layer that ranges across the lower Florida peninsula, from Miami to Fort Myers. It is part of the South Florida Basin, which is the largest unexplored geological basin in the lower 48 states. The lowest underground source of drinking water (USDW) is physically separated from the oil of the Sunniland Trend by more than two miles of geologic layers. These layers include multiple anhydrite layers, each of which are several hundred feet thick and all of which are impermeable. Oil in the Sunniland Trend has the consistency of liquid tar. The Sunniland Trend contains minimal amounts of natural gas, so the oil is under low pressure. As a result of the low pressure and viscous consistency, the oil does not naturally come to the surface in the manner most people associate with oil wells. Submersible pumps are required to bring the oil to the surface.

3. **Florida law requires that an applicant own a valid deed or lease granting the applicant the privilege to explore for oil, gas, or related mineral products on the lands included in the application. The application states that Kanter Real Estate, LLC “is the owner of the property on which the well is located.” Property deeds included with the application, however, appear to reference different corporate entities. Please provide documentation that clarifies the applicant’s interest and addresses this requirement. [377.243(1), F.S.]**

Kanter Real Estate, LLC is the owner of the property. Below is a summary of the transfers of ownership of the property, starting with Allstate Dredge Co. and ending with Kanter:

1. 1967 Allstate Dredge Co. warranty deed to Airo Jet Industrial City, Inc.
2. 1975 and 1976 Airo Jet Industrial City, Inc. warranty deeds to Kanter Corporation of Florida
3. 1983 The Kanter Corporation of Florida warranty deed to The Kanter Corporation
4. April of 2015 The Kanter Corporation converted to Kanter Real Estate, LLC (the applicant)

See **Attachments 3(a), 3(b), 3(c), 3(d), and 3(e).**

**3.1. The application also includes a copy of an easement that appears to address the exploration or drilling for oil, gas, or other minerals at the proposed site. Please indicate whether a title search was performed to identify any other potential property interests.**

Manson Bolves Donaldson, P.A. has analyzed the abstract of title performed in 2014 and all recorded instruments regarding the property subject to the permit application within Section 23, Township 51 South, Range 38 East. Other than the easement in favor of the South Florida Water Management District in 1950 at 711/282, there are no other owners of property rights for the specified property.

**4. Florida law requires that an applicant acquire a lawful right to drill from a majority of the mineral interests within a drilling unit prior to applying for a drilling permit. The application appears silent on mineral interests within the proposed drilling unit. Please provide information that supports the proposal and addresses this requirement. [377.241, F.S.]**

As stated above, a complete review of the property records and an abstract of ownership have been performed by Manson Bolves Donaldson, P.A. for the property subject to this permit application. Kanter Real Estate, LLC exclusively holds all mineral rights for the drilling unit specified in the permit application within Section 23, Township 51 South, Range 38 East.

**4.1. Department rule also requires each application to be accompanied by a location plat that shows and provides a legal description of all mineral acreage with the drilling unit which is not under lease to the applicant. The application appears silent on mineral acreage within the proposed drilling unit. Please provide information that supports the proposal and addresses this requirement. [62C-26.003(7)(b), F.A.C.]**

A location plat with a statement that the mineral acreage with the drilling unit is wholly owned by Kanter Real Estate LLC is attached to this response. See **Attachment 4.1.**

**4.2. Department rule requires that the location plat also show the exact well location with reference to drilling unit boundaries, quarter-section corners, rivers and other prominent features; show ground elevation (with tolerances) at the drill site; state whether the proposed drilling unit is routine or nonroutine; and meet the minimum technical standards established in rule by the Board of Professional Surveyors and Mappers. Please revise the included Well Location Plat (Exhibit G) to address these requirements. [62C-26.003(7), F.A.C.]**

As provided in 61C-26.003(7)(c), F.A.C., Kanter is providing a plat made in accordance with the rules of the Board of Professional Surveyors and Mappers using state plane coordinates, which are described in Section 177.151, Florida Statutes. This plat is included as **Attachment 4.2(a)**. An additional plat with topographic information is included as **Attachment 4.2(b)**.

Kanter's representatives explained at the meeting with Department staff on September 1, 2015 that the area surrounding the drill site has never been surveyed by the State of Florida or the federal government. Without an original government survey, producing a plat with quarter-section corners would create a hardship for Kanter. Section corners are unavailable, and an inordinate amount of preliminary surveying would have to be done to establish section corners or other standard reference points. In addition to Kanter's notice, information discussed with the Department, and explanation of this hardship, included as **Attachment 4.2(c)** is a written notice and explanation of the hardship.

**4.3. The application appears to contain a discrepancy between the bottom hole location identified in Section 7.0 and the surface hole location identified in the included location plat. Please clarify and make any necessary corrections to the proposal.**

The location plat contains the correct bottom hole location and surface hole location. See **Attachment 4.3**. The corrected language is included in the revised application.

**5. Department rule allows a single permit to be issued for the drilling of a well and activities associated with the test phase immediately following well installation. The application indicates that there "are no plans for gathering lines or pipeline at this time," but otherwise appears silent on activities proposed to follow drilling of the well that the applicant proposes be covered by a single permit. Please provide information regarding proposed onsite activities during the test phase and identify any necessary equipment, materials, vehicles, or infrastructure to support the test phase. [62C-25.006(1), F.A.C.]**

In the event production casing is run on the well, testing will proceed as follows:

- Casing will be tested to 1500 psi
- A gauge ring will be run to TD
- A cement bond log will be run
- Perforations will be made based on electric logs
- 2 7/8" 6.5#/ft. n 80 EUE tubing will be run to approximately 10,500 ft.
- Well will be swab tested for 3-10 days
- Well may be treated with 1000 gal. of 15% HCL acid after initial clean up swabbing
- If deemed a commercial well will be fitted with a jet pump or rod pump for production

Below is a list of all necessary equipment, materials, vehicles, and infrastructure necessary to support the test phase of the well:

- Wireline trucks for logging and perforating

- Workover rig and support equipment to work over well
- Trucks to deliver tubing & tools (5)
- Swab rig for swab testing, tanks for swab fluids (2-3 tanks with total of 1200 bbl. Cap.)
- Pump truck and tank truck for treatment
- Water and oil trucks to haul off produced fluids
- Fuel tank and fuel truck to deliver fuel
- Test truck to test tubing
- Office trailer for supervisors
- Doghouse trailer for workover personnel
- Vehicles to transport personnel to and from site(5-10 daily)
- Garbage and sanitation service vehicles (bi-weekly)
- Portable toilets (2)

**5.1. Please indicate if the applicant is proposing to conduct a drill stem test prior to running production casing. If planned, please describe the provisions for conducting the tests and identify the relevant industry standards and practices proposed, equipment needed, and on-site fluid storage requirements. [62C-27.001(6), F.A.C.]**

Kanter does not plan to run a drill stem test prior to running production casing.

**6. Florida law requires that an applicant implement programs for the control of pollution related to oil, petroleum products or their byproducts, and other pollutants and the abatement thereof when a discharge occurs. The application appears to rely on well construction in accordance with department rule to address the potential for and control of subsurface discharges. The application states that the “drilling location will have secondary containment areas around the rig substructure and the generator (including its fuel tanks),” that “containment areas will be covered by a high-density polyethylene liner system that will collect rainwater, oils, grease, and other fluids and direct them to a sump,” and that a “containment berm surrounding the fuel tanks will retain 1.5 times the tanks’ stored volume.” The application otherwise appears silent on potential surface spill sources, and measures proposed to control and abate spills from those sources. Please provide information that supports the proposal and addresses this requirement. [377.243(2), F.S.]**

The Sunniland Trend is an oil-bearing geological layer that ranges across the lower Florida peninsula, from Miami to Fort Myers. It is part of the South Florida Basin, which is the largest unexplored geological basin in the lower 48 states. The lowest underground source of drinking water (USDW) is physically separated from the oil of the Sunniland Trend by more than two miles of geologic layers. These layers include multiple anhydrite layers, each of which are several hundred feet thick and all of which are impermeable. Oil in the Sunniland Trend has the consistency of liquid tar. The Sunniland Trend contains minimal amounts of natural gas, so the oil is under low pressure. As a result of the low pressure and viscous consistency, the oil does not naturally come to the surface in the manner most people associate with oil wells. Submersible pumps are required to bring the oil to the surface.

Kanter is relying on the strict well construction standards in accordance with Department rule to address the potential for and control of subsurface discharges. The high-density polyethylene lined containment area (under all stationary equipment containing fluids) is primarily to contain those fluids in the event of leakage. A copy of the construction plan set is included as **Attachment 6(a)**. The perimeter berm will provide containment in the event of catastrophic flow from the subsurface through the wellbore. Please see Sheets C-2.02 and C-2.03 of **Attachment 6(a)** for a depiction of the impervious containment area around the drilling equipment. This is intended to be the primary containment system. The impervious layer is hydraulically separated from the stormwater management system and will have a sump in the center that will collect any spills or rainwater. To be conservative, the berms for the site have been designed to contain stormwater for the entire site, including the area designated for impervious containment. A spill prevention and clean-up plan is included as of **Attachment 6(b)**.

**6.1. Please identify each potential spill source, outline protective measures to avoid spills at each point (such as how each piece of equipment is designed and will be maintained to prevent pollution), identify equipment to be used in an emergency, and specify action planned to remove each such spill that might occur.**

Potential sources of spills on site are as follows: drilling fluid from pits or circulating system, water from storage tanks, fuel from fuel tanks, oils from oil containers, and oil and coolant from engines. A spill from one of these sources would be removed to a containment tank via pump (centrifugal, diaphragm, or vacuum). Small oil spills will be removed with oil soak pads. Vacuum trucks will be on standby in the event of a larger spill and to remove contaminated fluids from the site. The bleeder from the discharge culvert will be shut in the event of any spill.

**Attachment 6(b)** is a spill prevention and clean-up plan identifying each potential spill source, the protective measures that will be employed to avoid spills at each point, equipment to be used during an emergency, and specific actions to remove each spill that might occur.

**6.2. Department rule requires each application to be accompanied by a location plat that specifies the distance to rivers and other prominent features, and requires submittal of an aerial photograph of the drill site at a large scale. Please address these requirements at a scale relevant to support the proposal in the context of pollution prevention and spill response. [62C-26.003(7), F.A.C., 62C-26.003(10), F.A.C., and 62C-30.005(2)(b)2., F.A.C.]**

A location plat that specifies the distance to rivers and other prominent features on an aerial of the drill site at a large scale is included as **Attachment 6.2**.

**6.3. The application indicates that water for drilling will be supplied by “on-site wells located at the northeast and southeast corners of the pad.” Please clarify the location of the proposed water wells on the included drilling pad sketch (Exhibit H), given the pad does not have an apparent northeast or southeast corner.**

A plat identifying the location of the oil well, drill pad and water wells is included as **Attachment 6.3**.

**6.4. Please identify all freshwater resources within one mile of the proposed drilling location and explain how they will be protected in the event of accident or blowout. [377.242, F.S.]**

The Sunniland Trend is an oil-bearing geological layer that ranges across the lower Florida peninsula, from Miami to Fort Myers. It is part of the South Florida Basin, which is the largest unexplored geological basin in the lower 48 states. The lowest underground source of drinking water (USDW) is physically separated from the oil of the Sunniland Trend by more than two miles of geologic layers. These layers include multiple anhydrite layers, each of which are several hundred feet thick and all of which are impermeable. Oil in the Sunniland Trend has the consistency of liquid tar. The Sunniland Trend contains minimal amounts of natural gas, so the oil is under low pressure. As a result of the low pressure and viscous consistency, the oil does not naturally come to the surface in the manner most people associate with oil wells. Submersible pumps are required to bring the oil to the surface. Sunniland Trend oil can be refined to produce gasoline and diesel fuel, lube oils, and asphalt.

A plat identifying all freshwater resources within one mile of the proposed drilling location is included as **Attachment 6.4(a)**. A construction pollution plan is as **Attachment 6.4(b)**, a safety plan is included as **Attachment 6.4(c)**, a stormwater pollution prevention plan is included in Sheet C-3.01 of the construction plan set in **Attachment 6(a)**, and a spill prevention and clean-up plan is attached as **Attachment 6(b)**. All of these plans address the protection of freshwater resources.

**6.5. Please identify the nearest drinking water wells to the proposed well site.**

The lowest underground source of drinking water (USDW) is physically separated from the oil of the Sunniland Trend by more than two miles of geologic layers. These layers include multiple anhydrite layers, each of which are several hundred feet thick and all of which are impermeable. A plat identifying the nearest drinking water wells to the proposed well site is included as **Attachment 6.5**.

**6.6. Please identify any information the applicant considers relevant to characterizing existing or background water quality at the proposed well site.**

The area between the L 67-A and L 67-C levees is known as the "Pocket Area." Inflow to this area historically has been rainfall and seepage from the L67A. Water quality in the Pocket Area has generally been good, with some seepage of WCA 3A water through the L 67-A levee into the Pocket Area. This inflow of WCA 3A water has increased phosphorus levels and has impacted the Pocket Area adjacent to the L 67-A levee, which is the location of the Kanter 23-2 well pad.

There is little data on the water quality at the proposed oil well site, but as it is adjacent to L 67-A, it is anticipated that phosphorus levels could be elevated. Some background water quality data is available from the DECOMP project, southwest of this location. A water quality monitoring plan for the proposed oil well site would include collection of samples for background level determination before drilling commences. Also, background water quality data from the DECOMP project would be acquired to use for comparison.

**6.7. The application does not identify any potentially toxic or hazardous materials stored onsite for drilling purposes or in support of ancillary equipment. Please identify any materials that might pose a risk to groundwater quality and provide the department with a Materials Safety Data Sheet for such materials.**

The list of all potentially toxic or hazardous materials to be stored on site for drilling purposes or in support of ancillary equipment is:

- Antifreeze
- Cotton Seed Hulls
- Drilling Paper
- Duo-Vis
- Fed Seal
- Floxit
- Gear oil (80-90)
- Hydraulic fluid (Series 46)
- Max Gel
- MI-Gel
- Motor oil (10W-40)
- PolySal
- Salt Gel
- Soda Ash

Duo Vis, M-I Gel, Max Gel, Salt Gel are viscosifiers. Flox-It is a flocculant. Soda Ash is used for pH control. Cotton Seed Hulls, Paper, and Fed Seal are loss circulation materials. PolySal is a water loss control agent. Gear oil, motor oil, and hydraulic fluid are lubricants. Antifreeze is a coolant. The associated Materials Safety Data Sheets are included as **Attachment 6.7**.

**6.8. Please indicate how the proposed well site will be secured to prevent unauthorized access or vandalism.**

The proposed well site will be secured by a six-foot chain link fence and a locked gate. Only supervisors of well drilling activities or construction foremen for each shift will have access to a gate key.



7. Department rule requires the applicant to describe the provisions made for locating and constructing roads, pads, and other facilities needed for drilling operations, and requires the applicant to make every effort to minimize related impacts. Additionally, for sites located in sensitive areas, department rule prohibits permanent adverse impacts on water resources, sheet flow of the area, or on the vegetation or the wildlife of the area, with special emphasis on rare and endangered species. Department rule also precludes construction of access corridors and drilling pads through certain sensitive resources unless reasonable and prudent alternatives are not available. The application indicates that the proposed activity will be conducted within an area of private ownership of approximately 20,000 acres, but the application appears silent regarding the selection of the specific well site within this area. Please provide information that supports the proposal and addresses these criteria. [62C-26.003(10), F.A.C., 62C-30.005(1), F.A.C., 62C-30.005(2)(a)11., F.A.C., and 62C-30.005(2)(b)1., F.A.C.]

Kanter Real Estate LLC owns approximately 20,000 acres of property in WCA 3. This property exists in two parcels. See **Attachment 7(a)**. The southern parcel of the Kanter ownership was selected for the oil well site for several reasons.

First, there are existing seismic data covering this location which, once analyzed in the report included as **Attachment 2**, justified the consideration of an exploratory well. ***This report is trade secret, confidential, and exempt from public records law, as provided in Sections 812.081, 815.04(3), and 815.045, Florida Statutes.***

Second, the L 67-A and L 67-C levees and canals cut across this southern parcel. These levees and canals have dramatically disrupted sheet flow, altered hydrology, and degraded the natural habitat. The site is adjacent to L67-A. The project area of approximately 6.83 acres is 0.0004% of the 1.5 million acres of the Everglades; 0.03% of the 20,000 acres of the Kanter property in WCA 3A and B; 0.05% of the area between L67A and L67C and 0.54% of the Kanter property between these two levees. As a result, the oil well site will have negligible, if any, impact on the water resources of the area, and there will be no disruption of already seriously impacted sheetflow, vegetation, or wildlife of the area. Additionally, the two levees also provide access to the well site, so there will be no need to create additional roads.

Third, the well location is 237 feet off of the levee. This location will greatly reduce the amount of construction required to create access to the drill pad, thereby reducing potential impacts.

Fourth, the flowage easement granted to the Central and Southern Flood Control District, attached as **Attachment 7(b)**, guarantees the owners of the property access to this area. It states:

It is specifically understood and agreed that the forgoing grant of the uses, rights and privileges aforesaid shall in no wise prohibit or interfere with the right of the party of the first part, its successors, assigns or lessees, to:

- (a) Lease or conduct operations on the premises herein described, for the exploration or drilling for, or the developing, producing, storing or removing of oil, gas or other minerals in or under the aforesaid premises;

(b) Make such further use as will not conflict with the purposes for which this grant is given.

To exercise these rights, the grantor, its successors, assigns or lessees, and agents and employees shall have such right of ingress and egress to and from the property hereinbefore set forth, as may be necessary. It being further specifically understood and agreed that the rights retained under the provisions of this paragraph shall be exercised by the grantor, its successors, assigns or lessees, subject to any reasonable rules and regulations which the Governing Board of the CENTRAL AND SOUTHERN FLORIDA FLOOD CONTROL DISTRICT may prescribe for the efficient maintenance and operation of a public project in the interest of flood control, reclamation, conservation and allied purposes, but **which shall permit the reserved rights to be exercised so that oil, gas and minerals may be developed, extracted and removed from the District in accordance with sound engineering principles.** [Emphasis added]

**7.1. The application states that the location “contains habitat for federal and state listed wildlife species” but otherwise appears silent on wildlife or wildlife impacts. Please clarify whether a wildlife survey was performed and explain whether the proposal will affect wildlife in the area.**

Wildlife surveys have already been conducted for WCA 3, which include the proposed oil well site. These surveys were conducted for the Comprehensive Everglades Restoration Project (“CERP”) and for the Decentralization and Sheetflow Enhancement Physical Model (“DPM” or “DECOMP”) project conducted by the U.S. Army Corps of Engineers (“Corps”) and South Florida Water Management District (“SFWMD”). DECOMP was constructed 11.21 miles south of the proposed oil well site along a 3,000-foot stretch of the L-67A and L-67C levees and canals in WCA 3. A map indicating the relative locations of the DECOMP project and the proposed oil well site is included as **Attachment 7.1(a)**.

The Corps’ April 2010 document, *Installation, Testing and Monitoring of a Physical Model for the Water Conservation Area 3 Decentralization and Sheet Flow Enhancement Project Final Environmental Assessment and Design Test Documentation Report (“Report”)*, describes wildlife in the area. Please note the following differences between the DECOMP project area described in the Report and the proposed oil well site:

- The proposed oil well site and the DECOMP project area are both located within the remnant Everglades in southeastern Florida, in an area removed from large cities and industrial areas. The proposed oil well site is located in Broward County, west of Holiday Park, while DECOMP is located in Miami-Dade County.
- The proposed oil well location is owned by the Kanter Corporation, subject to a flowage easement that was granted to the Central and Southern Flood Control District in 1950. The design test and areas potentially impacted by the DECOMP project are owned by SFWMD and managed by the Florida Fish and Wildlife Conservation Commission (“FWCC”).

- The proposed oil well is located between the L67A and L67B levees, adjacent to L67A, on the southern side of the levee. The DECOMP project is 11.21 miles south of the proposed oil well site along the L67-A levee.
- The proposed oil well site will not impact the L67A canal, while the DECOMP project had some impacts on the canal.

Regarding the general environmental condition of the area, the Report states on page 3-1:

WCA 3 is comprised of WCA 3A (786 square miles) and WCA 3B (128 square miles) and is divided by two levees. The conservation area is predominantly a vast sawgrass marsh dotted with tree islands, wet prairies, and aquatic sloughs. A cypress forest fringes its western border along the L-28 gap and expands south to the Tamiami Trail. The historic landscape in this area was composed of sawgrass marsh and an expansive ridge and slough system with numerous tree islands, some of which were the largest in the ecosystem.

The introduction of regional transportation corridors and water management systems fragmented wildlife habitat throughout the Everglades ecosystem, including the WCAs. The once vast, naturally connected landscape has been cut into a mosaic of various-sized habitat patches. The canals adjacent to the project area likely serve as an effective barrier to wildlife movement, interfering with or preventing life functions of many native wildlife species.

The features associated with the DPM project would be constructed on the L-67 canal/levee system. While areas of both WCA 3A and WCA 3B will be affected, the project is expected to mainly influence WCA 3B, the receiving basin.

The FWCC's letter to Mr. Levi Sciara of the Department, dated August 4, 2015 ("**FWCC Letter**") (**Attachment 7.1(b)**) confirmed that the proposed oil well site contains the same threatened and endangered species and state species of concern as the DECOMP project area, excepting the West Indian manatee, Southeastern American kestrel, and Florida sandhill crane. The proposed oil well site also does not contain Florida panther habitat. Included as **Attachment 7.1(c)** are panther habitat maps from the DECOMP Report, which demonstrate that the Well site is outside the primary and secondary habitat zones for the Florida panther.

As described in page 3 of the FWCC Letter, "Wildlife surveys have not been conducted onsite, however the application provides a commitment to follow the U.S. Fish and Wildlife Service (USFWS) Eastern Indigo Snake Protection Plan, USFWS Habitat Management Guidelines for the Wood Stork in the Southeast Region Plan, and the USFWS Snail Kite Survey Protocol." Kanter's commitment to follow these USFWS guidelines is based on surveys performed in support of CERP. Also, because species surveys have not yet been conducted onsite and because the location of the proposed activities may impact the listed species mentioned in the FWCC Letter with the four exceptions noted in the previous paragraph), Kanter commits to obtaining wildlife surveys for the above-listed species prior to any site development activities. Kanter will ensure that wildlife surveys are conducted by qualified individuals with recent documented experience, following survey protocols established by the USFWS and the FWCC, conduct

wildlife surveys. Additionally, Kanter will coordinate with the USFWS South Florida Ecological Services Office for any necessary federal requirements.

Snail kites frequently nest in WCA 3B downstream of the proposed oil well site, and surveys for snail kites will be conducted before and during construction activities. Kanter will coordinate with the USFWS for information regarding potential impacts to this species. Additionally, if snail kites are documented near the project site, Kanter will coordinate with Tyler Beck, FWCC's Snail Kite Conservation Coordinator.

The proposed oil well site is located within the USFWS Consultation Area for the federally endangered Florida bonneted bat and potential habitat for this species may exist onsite. There is no evidence at this time of habitat suitable for bats in the immediate area because bats reside in trees, which are absent from the property. However, Kanter will take steps to determine if and how bonneted bats may be using the proposed oil well site. This could include conducting acoustic surveys to determine presence of bonneted bats and searching for potential roost sites that could be used by any bat species, such as tree cavities or under dead palm fronds, within the proposed oil well site. For any potential roost site that is located, the potential roost site will be examined by a trained wildlife professional and the area around it will be searched for signs of bats. If bats are found roosting within or near the proposed oil well site, the bats will be identified as to species to be able to determine if they are Florida bonneted bats. If Florida bonneted bats are identified, Kanter will immediately contact the USFWS and also provide that occurrence information to the FWCC.

Kanter will conduct surveys for state listed wading birds immediately prior to construction that occurs during the breeding season (January-August). Surveys will occur within 1,000 feet of the proposed oil well site because wading birds in the WCAs are unaccustomed to the level of disturbance caused by construction. If active wading bird nesting colonies are discovered within 1,000 feet of the proposed oil well site, Kanter will conduct construction activities outside of the breeding season. If this proves to not be feasible, Kanter will contact FWCC staff for technical assistance on avoidance, minimization, and potential permitting alternatives.

For Least Terns, Kanter will implement the following measures to reduce nesting potential during construction:

- Conduct construction activities outside of the breeding season (generally April through August),
- Clear the site only when ready to build, and
- Avoid leaving cleared areas with little to no activity for an extended amount of time.

If nesting is observed, Kanter will contact FWCC staff to discuss necessary nest buffers and potential permitting alternatives.

**7.2. The application appears silent on cultural and archeological resources. Please clarify whether a cultural and archeological resources assessment was performed and whether the proposal will affect cultural resources in the area.**

The Division of Historical Resources, Florida Department of State advises in the correspondence included as **Attachment 7.2** that there are no recorded archaeological sites or other historic resources recorded within the area of the proposed oil well site, and given the environment it is unlikely that a project of this scale will lead to the disturbance of any significant resources. This project is recorded as DHR file number 2015-3766. Therefore, a cultural and archeological resources assessment will not be performed.

**7.3. The application appears silent on the sheet flow of the area. Please clarify whether the proposal will affect sheet flow of the area.**

The L 67-A and L 67-C levees and canals, which create a pocket, cut across this southern Kanter parcel. The two levees have dramatically disrupted sheet flow, altered hydrology, and degraded the natural habitat. The pad site is adjacent to the L67-A levee and is only 0.05% of the total of 22 acres in the L67-A/L67-B gap. There will be no disruption of already seriously impacted sheet flow.

**8. Department rule requires that existing roads be used wherever feasible. The application proposes the use of levees located off U.S. Highway 27 and U.S. Highway 41 for access to the proposed well site. The application appears to imply that these levees are owned by the South Florida Water Management District and that the applicant's use is authorized by easement. Please clarify or confirm. [62C-26.003(10), F.A.C. and 62C-30.005(2)(a), F.A.C.]**

Yes, the SFWMD owns the levees, and Kanter's use of them is authorized by easement. In 1950, the Kanter property's previous owner granted a flowage easement to the then-Central and Southern Flood Control District (now SFWMD). It states:

It is specifically understood and agreed that the forgoing grant of the uses, rights and privileges aforesaid shall in no wise prohibit or interfere with the right of the party of the first part, its successors, assigns or lessees, to:

(a) Lease or conduct operations on the premises herein described, for the exploration or drilling for, or the developing, producing, storing or removing of oil, gas or other minerals in or under the aforesaid premises;

(b) Make such further use as will not conflict with the purposes for which this grant is given.

To exercise these rights, the grantor, its successors, assigns or lessees, and agents and employees shall have such right of ingress and egress to and from the property hereinbefore set forth, as may be necessary. It being further specifically understood and agreed that the rights retained under the provisions of this paragraph shall be exercised by the grantor, its

successors, assigns or lessees, subject to any reasonable rules and regulations which the Governing Board of the CENTRAL AND SOUTHERN FLORIDA FLOOD CONTROL DISTRICT may prescribe for the efficient maintenance and operation of a public project in the interest of flood control, reclamation, conservation and allied purposes, but which shall permit the reserved rights to be exercised so that oil, gas and minerals may be developed, extracted and removed from the District in accordance with sound engineering principles.

A complete copy of this easement is included in **Attachment 7(b)**.

Also, a right-of-way permit will be obtained from SFWMD once a preferred route is selected.

**8.1. The application appears silent on details of proposed traffic and whether, as a structural matter, existing levees and bridges can support the proposed traffic and proposed drilling activities. Please explain the nature of the proposed traffic, explain the capacity of existing infrastructure to withstand the proposed traffic and proposed drilling activities, and indicate whether this infrastructure must be improved. Please be aware that road improvements or new road construction must be subject to this permitting review.**

Kanter has identified four distinct access routes along SFWMD levees. See **Attachment 8.1**. A right-of-way-permit needs to be obtained from SFWMD once a preferred route is selected.

The SFWMD uses the L67-A levee and other levees accessed from State Road 27 and State Road 41 for the purposes of maintenance, construction and general access associated with the levees and the water conservation areas. Kanter will commit to utilizing equipment that is standard to ordinary district maintenance and construction activities in terms of size, capacity and/or weight restrictions. Therefore no road improvements are to be proposed or anticipated. Kanter proposes to utilize traffic control measures that include:

- Install and maintain traffic control devices, warning devices, barriers, signage and safety devices per FDOT standard specifications during construction
- Control dust through standard means
- Utilize existing ramps along the levee for passing of traffic

Kanter will also provide any other safety measures as deemed appropriate by the SFWMD.

**8.2. The application indicates that “[a]ccess to the drilling site will not impact any wetlands or surface waters” but otherwise appears silent regarding a “driveway” transition between the levee and drilling pad. Please provide details regarding construction of any such transition.**

The drill pad is proposed to tie directly into the L67-A levee. The site plan and construction drawings depicting this feature are included in Sheet C-2.02 of the construction plan set in **Attachment 6(a)**. All wetland impacts from the well site will be mitigated through the acquisition of mitigation bank credits.

- 9. Department rule requires that drilling pads be constructed from trucked-in material or from material taken from approved borrow pits. The application appears silent on drilling pad materials. Please provide information regarding the source and characteristics of proposed drilling pad material. [62C-26.003(10), F.A.C. and 62C-30.005(2)(b)5., F.A.C.]**

The drilling pad material will be "Select Fill" in accordance with SFWMD standard specification Section 02200 EARTHWORK Part 1 1.03 A. Select Fill. Under this specification, Select Fill is required where higher control of materials and placement was needed such as water retaining embankment cores, roadway embankments, and adjacent to structures. It is clean, well-graded material free from debris, peat, roots, seeds of nuisance or exotic species, organic material, clods, and stones with a diameter greater than three (3) inches (76 mm) in any direction. It will have an average organic content of not more than 2% or have an individual test value of not more than 4%.

- 10. Department rule requires that drilling pads be constructed to a height to assure year round usage. The application indicates that the proposed pad will be constructed to a height of 11.9 feet NAVD, but otherwise appears silent regarding criteria used to support this design. Please provide information that supports the proposal and addresses this requirement. [62C-26.003(10), F.A.C. and 62C-30.005(2)(b)6., F.A.C.]**

The proposed oil well is located south of the L 67-A levee within WCA 3B. The property north of L 67-A is in WCA 3A, which is regulated at a higher elevation than WCA 3B. The historic high level in WCA 3A is 11.49 feet NAVD. The top of the berm has been set at 14.5 feet NAVD, and the bleeder invert elevation has been set at 11.5 feet NAVD. These elevations are consistent with keeping the proposed project control elevations above the historic elevations of the L 67-A canal at 11.49 feet NAVD, which is higher than the regulation schedules for both WCA 3A and WCA 3B.

- 11. Department rule requires construction of a protective levee around the drilling site and storage tank areas, and requires the levee to be of sufficient height and impermeability to prevent the escape of pad fluids. In addition, dikes must be of sufficient size and strength to prevent rain water from washing onto and inundating pads. The application states that a "three-foot earth berm will surround the 5-acre operating area in order to contain all water on the site" but otherwise appears silent regarding criteria used to support this design. Please provide information that supports the proposal and addresses this requirement. [62C-27.001(4)(c), F.A.C., 62C-26.003(10), F.A.C., and 62C-30.005(2)(b)7., F.A.C.]**

Please see Sheets C-2.02 and C-2.03 of **Attachment 6(a)**, which depict primary and secondary containment measures. The primary containment is the liner that is designed to drain liquids to a sump for removal from the site. Secondary containment is the area outside the liner and will be part of the stormwater management system. The stormwater management system has been designed to retain runoff from both primary and secondary containment, as well as the contributing area from the levee.

- 12. Please explain the purpose and intended use of the area labeled as "proposed spoil area" in Exhibit H of the application.**

The spoil area is intended to receive the material created from de-mucking the site. It will be comprised of native material and will be stored onsite. It will be stabilized by plantings of native grasses. It is not designed for stormwater management and will not be lined. It is hydraulically separated from the proposed stormwater management system.

**13. The application appears silent on the handling and disposition of drill cuttings, as well as the disposal of drilling fluids. Please provide information regarding the proposed handling of this material.**

Drill cuttings will be tested for hydrocarbons by DPS, a qualified testing company. Drill cuttings and drilling fluids will be handled and disposed in accordance with applicable hazardous waste and materials laws, which may include public landfills if the testing results indicate that is an appropriate method of disposal.

**14. Department rule requires all applications to contain the minimum setting depths, casing size, weight per foot, wall thickness, specified minimum yield strength, grade of pipe, class of cement to be used, cement additives, cement quantity, intended interval to be cemented, hole size, displacement method, special tools to be used and calculated percent excess. The application includes some specifications for casing and cementing but is silent on others. Please provide information for all casing strings both in the text and on the wellbore schematic. [62C-26.003(5), F.A.C.]**

Kanter will provide this information in both the text and on the wellbore schematic of its revised application. Please see the answers to items 14.1 and 14.2 and **Attachments 14.1, 14.2 and 27**

**14.1. The application appears silent on the installation and specifications of the conductor casing. Please provide information to address this requirement.**

- 24" diameter, ½" wall thickness conductor driven to 200 ft.
- 13 3/8" 54.5-lb. J 55 ST&C casing at 1800 KB (minimum 100 ft. below USDW and then cement to surface)
- 9 5/8" 47-lb. L 80 LT&C casing at 3800 ft. KB; TOC 3300 ft.
- 8 ½" hole TD at 11,800 ft.

The cement calculations, volumes, types, and additives are included in the proposed cementing plan. Please see **Attachment 14.1**.

**14.2. The conductor casing is labeled as 13 3/8" in the Proposed Casing and Cementing Plan (Exhibit M) and as 24" in the Wellbore Schematic (Exhibit N). Please clarify the proposed size of the conductor casing.**

The conductor casing label of 13 3/8" in the Halliburton cementing plan was an error. Please see the casing program provided in **Attachment 14.2**.



- 15. Department rule requires that all casing be new pipe or reconditioned so as to be equivalent to new pipe. The application is silent on the condition of the proposed casing. Please provide information to address this requirement. [62C-27.005, F.A.C.]**

This request seeks information outside the scope of the Department's statutory authority for oil well permitting. In particular, it seeks information regarding post-permitting activities that are not required or contemplated under the permitting provisions Chapter 377, Florida Statutes or the permitting rules in Chapters 62C-25, 26, or 30, F.A.C. Without waiving any objections or any other rights, Kanter responds as follows:

All pipe used for the proposed oil well will be new pipe.

- 16. Department rule requires casing to be set and cemented in accordance with generally accepted industry standards and practices. The application is silent on the criteria or standards relied upon during the design of the cement and the type and spacing of centralizers. Please provide the criteria and standards relied upon for cement and centralizer design. [62C-27.005(2), F.A.C. and 62C-27.005(3), F.A.C.]**

This request seeks information outside the scope of the Department's statutory authority for oil well permitting. In particular, it seeks information regarding post-permitting activities that are not required or contemplated under the permitting provisions Chapter 377, Florida Statutes or the permitting rules in Chapters 62C-25, 26, or 30, F.A.C. Without waiving any objections or any other rights, Kanter responds as follows:

Kanter will use the industry standard, which is first centralizer to be placed 10 feet above the casing shoe, then every third for a distance of 300 feet.

- 16.1. The application addresses centralizer type and spacing for the surface and intermediate casings, but appears silent on centralizer type and spacing for the production casing. Please provide centralizer information for the production casing.**

This request seeks information outside the scope of the Department's statutory authority for oil well permitting. In particular, it seeks information regarding post-permitting activities that are not required or contemplated under the permitting provisions Chapter 377, Florida Statutes or the permitting rules in Chapters 62C-25, 26, or 30, F.A.C. Without waiving any objections or any other rights, Kanter responds as follows:

Kanter will use the industry standard, which is first centralizer to be placed 10 feet above the casing shoe, then every third for a distance of 300 feet.

- 17. Department rule requires that all casing be pressure tested prior to well completion or drilling out after cementing. The required pressure tests have specific pressure specifications and durations, including tolerances, for pressure drops. The application states the pressure specifications for**

**surface and intermediate casings, but appears to be silent on testing durations and the test pressure for the production casing. Please provide information that supports the proposal and addresses these requirements. [62C-27.005(4), F.A.C. and 62C-27.005(5), F.A.C.]**

This request seeks information outside the scope of the Department's statutory authority for oil well permitting. In particular, it seeks information regarding post-permitting activities that are not required or contemplated under the permitting provisions Chapter 377, Florida Statutes or the permitting rules in Chapters 62C-25, 26, or 30, F.A.C. Without waiving any objections or any other rights, Kanter responds as follows:

Kanter will pressurize the production casing at 1500 pounds for 30 minutes.

- 18. Department rule requires the surface casing be set below the deepest underground source of drinking water (USDW) and cemented to surface. The application indicates that surface casing will be set to a depth of 1,800 feet, but otherwise appears silent on the depth of the deepest USDW. Please provide information that supports the proposal and addresses this requirement. [62C-27.005(1), F.A.C.]**

This request seeks information outside the scope of the Department's statutory authority for oil well permitting. In particular, it seeks information regarding post-permitting activities that are not required or contemplated under the permitting provisions Chapter 377, Florida Statutes or the permitting rules in Chapters 62C-25, 26, or 30, F.A.C. Without waiving any objections or any other rights, Kanter responds as follows:

Kanter will drill to a depth of 1800 feet. They will then come out of the hole and run a resistivity log to verify the depth of the USDW. If testing shows that casing is a minimum of 100 feet below the USDW, drilling will proceed. If testing shows that casing is not a minimum of 100 feet below the USDW, additional drilling will be conducted until a resistivity log confirms that casing is a minimum of 100 feet below USDW.

- 19. Department rule requires the applicant to take into account all relevant geologic and engineering data for the design of casing, cementing, mud, and well control programs. The application appears silent on the geologic or engineering considerations that were taken into account during the design process of the well. Please provide the specific data used for the design of each program above. [62C-27.001(5), F.A.C.]**

This request seeks information outside the scope of the Department's statutory authority for oil well permitting. In particular, it seeks information regarding post-permitting activities that are not required or contemplated under the permitting provisions Chapter 377, Florida Statutes or the permitting rules in Chapters 62C-25, 26, or 30, F.A.C. Without waiving any objections or any other rights, Kanter responds as follows:

Relevant geologic and engineering data for the design of cementing, casing, mud, and well control programs initially came from technical information contained in:

- Open-File Report 80, “Text to Accompany the Geologic Map of Florida” (Florida Geological Survey, 2001)
- “Reasonably Foreseeable Development Scenario for Fluid Materials” (U.S. Department of the Interior, Bureau of Land Management, April 2008)
- *National Assessment of Oil and Gas Project: Petroleum Systems and Assessment of the South Florida Basin*, chapter 2, “1995 USGS national Oil and Gas Play-Based Assessment of the South Florida Basin, Florida Peninsula Province (R. Pollastro, U.S. Geological Survey Digital Data Series 69-A, 2001)

In addition, Kanter’s oil driller, Pollister Drilling, operator, Century Oil, and cementing company, Halliburton, have decades of experience in the design of wells for the Sunniland Formation.

**19.1. Please clarify the purpose of each key product contained in the Drilling Fluid Program (Exhibit P). In addition, please supply the department with the Materials Safety Data Sheets for each product.**

This request seeks information outside the scope of the Department's statutory authority for oil well permitting. In particular, it seeks information regarding post-permitting activities that are not required or contemplated under the permitting provisions Chapter 377, Florida Statutes or the permitting rules in Chapters 62C-25, 26, or 30, F.A.C. Without waiving any objections or any other rights, Kanter responds as follows:

Duo Vis, M-I Gel, Max Gel, Salt Gel are viscosifiers. Flox-It is a flocculant. Soda Ash is used for pH control. Cotton Seed Hulls, Paper, and Fed Seal are loss circulation materials. PolySal is a water loss control agent. The MSDS sheets for all of these materials are included in **Attachment 6.7**.

**20. Department rule requires that the operator use only contractors or employees trained and competent to drill. The application appears silent on the nature and extent of contractor or employee training and experience. Please provide information that addresses this requirement. [62C-27.001(5), F.A.C.]**

This request seeks information outside the scope of the Department's statutory authority for oil well permitting. In particular, it seeks information regarding post-permitting activities that are not required or contemplated under the permitting provisions Chapter 377, Florida Statutes or the permitting rules in Chapters 62C-25, 26, or 30, F.A.C. Without waiving any objections or any other rights, Kanter responds as follows:

Kanter has engaged Pollister Drilling to perform the on-site drilling and Century Oil to operate the well and engage all other contractors necessary for the on-site drilling. Mr. Ed Pollister is the president of Century Oil, Pollister Drilling, and Oil Tech Services. His resume is included as **Attachment 20**.

**21. Department rule requires that before spudding the well, mud tanks of sufficient size to hold the active mud volume at the surface be installed for containment of all active drilling fluids. The Drilling Rig Information (Exhibit K) states that the mud system will consist of a “2 pit (940bbbl)”**

**system, but otherwise appears silent regarding criteria used to support this design. Please provide information that supports the proposal and addresses this requirement. [62C-27.001(4), F.A.C.]**

This request seeks information outside the scope of the Department's statutory authority for oil well permitting. In particular, it seeks information regarding post-permitting activities that are not required or contemplated under the permitting provisions Chapter 377, Florida Statutes or the permitting rules in Chapters 62C-25, 26, or 30, F.A.C. Without waiving any objections or any other rights, Kanter responds as follows:

A mud system consisting of a two-pit (940 bbl) system will be installed in accordance with industry standard. In addition, a closed loop pit system, 1000 barrels, will be installed as a backup.

- 22. Department rule requires that in national and state forests and parks, in wetlands, and in other sensitive areas, prefabricated tanks and drip pans be required for the containment of all waste fluids. The application is silent on the manner in which the waste fluids and cuttings are contained. Please provide information that supports the proposal and addresses this requirement. [62C-27.001(4)(a), F.A.C.]**

This request seeks information outside the scope of the Department's statutory authority for oil well permitting. In particular, it seeks information regarding post-permitting activities that are not required or contemplated under the permitting provisions Chapter 377, Florida Statutes or the permitting rules in Chapters 62C-25, 26, or 30, F.A.C. Without waiving any objections or any other rights, Kanter responds as follows:

Sealed, prefabricated tanks with drip pans will be used to contain all waste fluids. All cuttings will be solidified and removed from the site in accordance with applicable law.

- 23. Department rule requires the operator to maintain sufficient quantities of mud and mud additives, readily accessible for use, to insure well control. The application indicates the quantities of mud and mud additives that will be used, but otherwise appears silent regarding criteria used to determine that these quantities are sufficient to insure well control. Please provide information that supports the proposal and addresses this requirement. [62C-27.007(1), F.A.C.]**

This request seeks information outside the scope of the Department's statutory authority for oil well permitting. In particular, it seeks information regarding post-permitting activities that are not required or contemplated under the permitting provisions Chapter 377, Florida Statutes or the permitting rules in Chapters 62C-25, 26, or 30, F.A.C. Without waiving any objections or any other rights, Kanter responds as follows:

The quantity of mud and mud additives are calculated from the hole volume, which is 800 barrels. 9/2 brine water will be on location to weight up as necessary.

**23.1. The application appears silent on mud testing equipment and mud volume measuring devices. Please provide information to address mud measurement and testing. [62C-27.007(1), F.A.C.]**

This request seeks information outside the scope of the Department's statutory authority for oil well permitting. In particular, it seeks information regarding post-permitting activities that are not required or contemplated under the permitting provisions Chapter 377, Florida Statutes or the permitting rules in Chapters 62C-25, 26, or 30, F.A.C. Without waiving any objections or any other rights, Kanter responds as follows:

Mud scales and a mud visc cup will be on the drill rig. The drilling team will also use pH strips. All mud testing will be performed by a qualified engineer who will determine any additional requirements and perform all mud testing.

**24. Department rule requires specific procedures to be followed prior to and during tripping out of the hole. The application appears silent on proposed procedures to be followed prior to and during tripping out of the hole. Please provide information that supports the proposal and addresses these requirements. [26C-27.007(2)-(3), F.A.C.]**

This request seeks information outside the scope of the Department's statutory authority for oil well permitting. In particular, it seeks information regarding post-permitting activities that are not required or contemplated under the permitting provisions Chapter 377, Florida Statutes or the permitting rules in Chapters 62C-25, 26, or 30, F.A.C. Without waiving any objections or any other rights, Kanter responds as follows:

The operator will calculate the pipe displacement of drill string and will check the pit volume on the way in and on the way out, in accordance with industry standard. This will be checked every 10 stands to ensure fluid is not being gained.

**25. Department rule requires specific procedures for the installation, use and testing of blowout preventers and related well control equipment. The back pressure valve and the drill-string safety valve shall be maintained in the open position on the rig floor at all times while drilling operations are being conducted. The application appears silent on this issue. Please provide information to address this requirement. [62C-27.006(1), F.A.C.]**

This request seeks information outside the scope of the Department's statutory authority for oil well permitting. In particular, it seeks information regarding post-permitting activities that are not required or contemplated under the permitting provisions Chapter 377, Florida Statutes or the permitting rules in Chapters 62C-25, 26, or 30, F.A.C. Without waiving any objections or any other rights, Kanter responds as follows:

The floor safety valve and inside blowout preventer (dart valve) and the drill safety string valve will be maintained in the open position on the rig floor at all times while drilling operations are being conducted.

- 25.1. Department rule requires that blowout preventers and related well-control equipment be pressure tested when installed, before drilling out after each string of casing is set, not less than once a week while drilling, following repairs that require disconnecting a pressure seal in the assembly, and other times as prescribed by the department. The application appears silent on pressure tests while drilling and tests following repairs that require disconnecting a pressure seal in the assembly. Please provide information to address this requirement. [62C-27.006(2), F.A.C.]**

This request seeks information outside the scope of the Department's statutory authority for oil well permitting. In particular, it seeks information regarding post-permitting activities that are not required or contemplated under the permitting provisions Chapter 377, Florida Statutes or the permitting rules in Chapters 62C-25, 26, or 30, F.A.C. Without waiving any objections or any other rights, Kanter responds as follows:

Blowout preventers and related well-control equipment will be pressure tested when installed, before drilling out after each string of casing is set, not less than once a week while drilling, following repairs that require disconnecting a pressure seal in the assembly, and other times as prescribed by the Department.

- 25.2. Department rule requires bag-type blowout preventers to be actuated on the drill pipe or collars once a week. Accumulators and pumps shall maintain a pressure capacity reserve at all times to provide for repeated operation of hydraulic preventers. A blowout prevention drill shall be conducted weekly for each drilling crew to insure that all equipment is operational and that crews are properly trained to carry out emergency duties. All blowout preventer tests and crew drills shall be recorded in the driller's log. The application appears silent on testing and drills for the blowout preventers. Please submit information clarifying how these requirements will be addressed. [62C-27.006(4), F.A.C.]**

This request seeks information outside the scope of the Department's statutory authority for oil well permitting. In particular, it seeks information regarding post-permitting activities that are not required or contemplated under the permitting provisions Chapter 377, Florida Statutes or the permitting rules in Chapters 62C-25, 26, or 30, F.A.C. Without waiving any objections or any other rights, Kanter responds as follows:

Accumulators and pumps will maintain a pressure capacity reserve at all times to provide for repeated operation of hydraulic preventers. A blowout prevention drill will be conducted weekly for each drilling crew to insure that all equipment is operational and that crews are properly trained to carry out emergency duties. All blowout preventer tests and crew drills will be recorded in the driller's log.

- 25.3. The blowout preventer testing pressures, wellheads and hole sizes contained in "10.2 Well Control Equipment" are inconsistent with pressures, wellheads and hole sizes contained in Well Drilling Procedures (Exhibit L). In addition, the testing pressures in "10.2 Well Control**

**Equipment” are above the working pressure of the wellheads. Please provide information to clarify these discrepancies.**

The test pressures shall not exceed the lesser of the capacity of the well head or the blowout preventer. Please see the blowout preventer (BOP) schematic and the drilling procedure in **Attachments 25.3(a) and (b)**, respectively.

**25.4. The application’s Well Control Program (Exhibit O) omitted Figure 1 which depicted the drilling rig stack. Please supply the omitted Figure.**

The omitted figure is found in **Attachment 25.3(a)**.

**25.5. Please clarify the number of pipe rams and provide a current blowout preventer space-out drawing as described in Well Control Program (Exhibit O).**

There will be 1 pipe ram, 1 blind ram, and 1 annular ram. Please see **Attachments 25.3(a) and (b)**.

**26. Department rule requires that the operator develop a plan to safely and effectively control any hydrogen sulfide encountered. The plan must meet generally accepted industry practices, include a personnel training and safety program, and include contingencies for notifying authorities and evacuating civilians in the event of an accident. The Hydrogen Sulfide Gas Contingency Plan (Exhibit J) submitted with the application does not appear to identify the criteria or standards relied upon to develop the plan. Please provide information that supports the proposal and addresses this requirement. [62C-27.001(7), F.A.C.]**

Hydrogen sulfide is not likely to occur. Out of an abundance of caution, Kanter will bring onsite a safety contractor to monitor for hydrogen sulfide 24 hours a day, starting when the well reaches 9,000 feet deep. The safety plan will go into effect when the well reaches 10,000 feet. The plan was developed in line with the federal hydrogen sulfide safety plan regulation, 30 CFR 250.490, and Chapter 62C-27.001(7), F.A.C.

**26.1. The application indicates that the Hydrogen Sulfide Gas Contingency Plan “will go into effect at 10,500 feet, which is more than 1,000 feet higher than the top of the expected hazardous hydrogen sulfide zone.” Please provide information that supports this determination.**

The hydrogen sulfide contingency plan will go into effect at 10,000 feet. The revised permit application now reflects this, as does the hydrogen sulfide contingency plan. Hydrogen sulfide, if present, would be located in the Upper Sunniland Formation. As stated in the U.S. Geological Survey’s *National Assessment of Oil and Gas Project: Petroleum Systems and Assessment of the South Florida Basin*, chapter 2 “1995 USGS National Oil and Gas Play-Based Assessment of the South Florida Basin, Florida Peninsula Province,” on page 5, “Depth to the Upper Sunniland Formation tidal shoal reservoir rocks in the producing trend is about 11,200 to 11,600 feet.”

**26.2. The proposed well site is located within an area that may be subject to public recreation. Please clarify how the applicant proposes to notify civilians performing recreational activities in the event of a hydrogen sulfide release.**

Kanter will follow the following procedure to notify people performing recreational activities in the unlikely event of a hydrogen sulfide release:

- A Kanter representative will dispatch sufficient personnel to immediately warn Everglades Holiday Park and SFWMD personnel in the calculated radius of exposure.
- Green, yellow, or red flags will be placed along the L 67-A and Miami Canal levees within the calculated radius of exposure.
- A Kanter representative will immediately notify proper authorities, including the Broward County Sheriff's Office, Florida Highway Patrol, and any other applicable public officials and will enlist their assistance in warning people performing recreational activities within the calculated radius of exposure.
- A Kanter representative will dispatch sufficient personnel to divert traffic from the access levee and to monitor essential and non-essential traffic to the well site.

**27. Department rule establishes the naming convention for oil and gas wells. The application refers to the proposed well as "Kanter 23-1." The correct name for the proposed well is "Kanter 23-2." In addition, the application appears to include outdated versions of Form 1 and Form 3. The department's preference is for the applicant to submit a revised copy ("clean copy") of the proposal that corrects all apparent errors and includes all additional information requested herein. [62C-26.003(6), F.A.C.]**

A revised application is included as **Attachment 27**. The permit and all exhibits will refer to Kanter 23-2.



## Attachments

2(a) Technical report supporting the exploration and extraction of oil at the proposed location (Confidential; Trade Secret)

**CONFIDENTIAL. TRADE SECRET INFORMATION.** The contents of this document are a trade secret and are exempt from Florida public records law as provided in Sections 815.04 and 815.045, Florida Statutes. Do not share or publish without the owner's permission.

Documents provided to the Florida Department of Environmental Protection under separate cover.

2(b) Table of oil field depths in Florida

**Table 2: Oil and Natural Gas Fields of Florida**

Field	County	Date of Discovery	Reservoir (s)	Approx. Depth
<b>Florida Peninsula Fields</b>				
Sunniland	Collier	9-26-43	Sunniland	11,625
40 Mile Bend	Dade	9-1-54	Sunniland	11,555
Sunoco-Felda	Hendry	77-22-64	Sunniland	11,485
West Felda	Hendry	8-2-66	Sunniland	11,675
Lake Trafford	Collier	3-30-69	Sunniland	11,985
Bear Island	Collier	12-5-72	Sunniland	11,815
Seminole	Hendry	11-14-73	Sunniland	11,650
Lehigh Park	Lee	7-30-74	Sunniland	11,630
Baxter Island	Collier	8-11-77	Sunniland	11,820
Mid-Felda	Hendry	10-13-77	Sunniland	11,685
Raccoon Point	Collier	6-20-78	Sunniland	11,655
Pepper Hammock	Collier	9-28-78	Sunniland	11,895
Townsend Canal	Hendry	6-27-82	Sunniland	11,460
Corkscrew	Collier	11-10-85	Sunniland	11,565
<b>Florida Panhandle Fields</b>				
Jay	Santa Rosa	6-15-70	Smackover & Norphlet	15,985
Mt. Carmel	Santa Rosa	12-19-71	Smackover & Norphlet	15,400
Blackjack Creek	Santa Rosa	2-14-72	Smackover & Norphlet	16,235
Sweetwater Creek	Santa Rosa	4-22-77	Smackover	14,610
Bluff Springs	Escambia	3-25-82	Smackover	16,800
Mc Lellan	Santa Rosa	2-19-86	Smackover	14,475
Coldwater Creek	Santa Rosa	6-4-88	Smackover	15,400
Mc David	Escambia	6-14-88	Smackover	16,800

Source: Lane, 1994)

**Table 3: Annual Oil Production by Region and Field**

Region	Field (discovery date)	Oil 1000's bbls								
		1999	2000	2001	2002	2003	2004	2005	2006	2007
Florida Peninsula	Sunniland (1943)			10	9	8	9	12	12	7
	West Felda (1966)	284	270	278	282	282	262	240	261	211
	Lake Trafford (1969)	1	1	4	3	1	0	0	<1	1
	Bear Island (1972)	30	85	179	165	139	104	135	122	90
	Lehigh Park (1974)	45	41	23	35	19	32	21	33	32
	Mid-Felda (1977)			0	0	0	0	0	0	0
	Raccoon Point (1978)	746	598	625	630	545	445	428	396	371
	Corkscrew (1985)	23	51	59	47	38	30	30	29	27
	<b>Total</b>	<b>1,129</b>	<b>1,046</b>	<b>1,178</b>	<b>1,171</b>	<b>1,032</b>	<b>881</b>	<b>866</b>	<b>853</b>	<b>739</b>
Florida Panhandle	Jay (1970)	3,540	3,386	3,107	2,466	2,230	1,948	1,632	1,403	1,245
	Blackjack Creek (1972)	208	179	131	14	0	46	87	104	94
	McLellan (1986)	13	14	9	5	0	0	0	<1	0
	<b>Total</b>	<b>3,761</b>	<b>3,579</b>	<b>3,248</b>	<b>2,486</b>	<b>2,230</b>	<b>1,994</b>	<b>1,719</b>	<b>1,504</b>	<b>1,338</b>

Source: FGS, 2008

3. Explanation of the Kanter corporate entities, the property's chain of ownership, and a statement of property interests.



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Attn Mark Geiger  
28100 US 19 N, Suite 200  
Clearwater, FL 33761

**Date:** August 6, 2014  
**File Number:** PA2014-722a  
**County:** Broward  
**Reference:** M-FL144488

***Dear Customer:***

***Pursuant to your request, we have searched the public records of Broward County, Florida, from December 31, 1940 at 11:00 PM through July 30, 2014 at 11:00 PM to ascertain the following:***

Conveyances/Leases on the following described land to wit:

S 1/2, less FEC R/W, of Section 11, Township 51 South, Range 38 East, Broward County, Florida;

All, less FEC R/W, of Section 14, Township 51 South, Range 38 East, Broward County, Florida;

and

All Section 23, Township 51 South, Range 38 East, Broward County, Florida.

***From said search we report those entries as set forth on the following page(s). Copies of instruments, if any, have been attached for your review.***

***This search does not cover matters other than those recorded in the Official Records Book of the county and does not assure the legality or validity of the referenced instruments.***

***This search is prepared and furnished to provide only the above information. It is not an opinion of title and may not be used as a title base for the issuance of a title insurance commitment and/or policy, nor should it be used for the preparation of foreclosure proceedings or other litigation. Maximum liability for incorrect information is \$1000.***

***Prepared this 6th day of August, 2014.***

***Prepared by: Precision Abstracts, LLC  
Phone Number: 407-286-3607***

**File Number:** PA2014-722a

**Reference:** M-FL144488

1. **CFN #:** 1940-213810      **TOI:** Warranty Deed      **DOF:** 12/31/1940  
**First Party:** Leo Rosen and Miriam Rosen and J.O. Saul  
**Second Party:** Victor J. Tatham and Earmia A. Tatham
2. **CFN #:** 1941-215686      **TOI:** Quit Claim Deed      **DOF:** 2/18/1941  
**First Party:** J.O. Saul and Lena Saul  
**Second Party:** Victor J. Tatham and Earmia A. Tatham
3. **CFN #:** 1944-252991      **TOI:** Tax Deed      **DOF:** 8/22/1944  
**First Party:** Clerk of Circuit Court  
**Second Party:** State of Florida
4. **CFN #:** 1944-256076      **TOI:** Deed/Reservations      **DOF:** 10/20/1944  
**First Party:** State of Florida  
**Second Party:** Board of Commissioners of Everglades Drainage District
5. **Book and Page:** DB 709/292      **TOI:** Quit Claim Deed      **DOF:** 10/12/1950  
**First Party:** Board of Commissioners of Everglades Drainage District  
**Second Party:** Dallas Investment Co., a Florida corporation and Victor J. Tatham and Earmia A. Tatham
6. **Book and Page:** DB 783/257      **TOI:** Deed      **DOF:** 7/9/1952  
**First Party:** Dallas Investment Co. a Florida corporation  
**Second Party:** Victor J. Tatham
7. **Book and Page:** DB 783/259      **TOI:** Oil, Gas and Mineral Lease      **DOF:**  
7/9/1952  
**First Party:** Victor J. Tatham and Earmia A. Tatham  
**Second Party:** Shell Oil Company, a Delaware Corp.
8. **CFN #:** 1953-500407      **TOI:** Deed      **DOF:** 2/25/1953  
**First Party:** Scott M. Loftin John W. Martin, as Trustees  
**Second Party:** Central and South Florida Flood Control District
9. **Book and Page:** OR 1496/532      **TOI:** Deed      **DOF:** 3/24/1959  
**First Party:** Earmia A. Tatham, as Executrix of the Estate of Victor J. Tatham, deceased  
**Second Party:** Kendall-Krome Industrial Park, Inc., a Florida corporation
10. **Book and Page:** OR 1504/299      **TOI:** Deed      **DOF:** 3/31/1959  
**First Party:** Kendall-Krome Industrial Park, Inc., a Florida corporation  
**Second Party:** Allstate Dredge Co., a Florida corporation
11. **Book and Page:** OR 3001/415      **TOI:** Oil, Gas and Mineral Lease      **DOF:**  
4/20/1965  
**First Party:** Thomas L. Tatham individually, and as Administrator of the Estate of Victor

**File Number:** PA2014-722a

**Reference:** M-FL144488

- J. Tatham  
**Second Party:** Humble Oil and Refining Company
12. **Book and Page:** OR 3187/772      **TOI:** Rental Division Order      **DOF:** 3/10/1966  
**First Party:** Thomas L. Tatham individually, and as Administrator of the Estate of Victor J. Tatham  
**Second Party:** Humble Oil & Refining Company
13. **Book and Page:** OR 3440/545      **TOI:** Warranty Deed      **DOF:** 6/12/1967  
**First Party:** Allstate Dredge Co., a Florida corporation  
**Second Party:** Airo Jet Industrial City, Inc., a Florida corporation
14. **Book and Page:** OR 4277/630      **TOI:** Quit Claim Deed      **DOF:** 8/12/1970  
**First Party:** Thomas L. Tatham individually, and as Administrator CTA of the Estate of Victor J. Tatham, deceased and as Executor of the Estate of Earmia A. Tatham, deceased and Bernice Tatham, wife of Thomas L. Tatham  
**Second Party:** Airo-Jet Industrial City, Inc., a Florida corporation
15. **Book and Page:** OR 6189/30      **TOI:** Warranty Deed      **DOF:** 4/1/1975  
**First Party:** Airo-Jet Industrial City, Inc., a Florida corporation  
**Second Party:** Kanter Corporation of Florida, a Florida corporation
16. **Book and Page:** OR 6293/928      **TOI:** Warranty Deed      **DOF:** 8/6/1975  
**First Party:** Airo-Jet Industries, Inc.  
**Second Party:** Kanter Corporation of Florida
17. **Book and Page:** OR 6616/522      **TOI:** Corrective Warranty Deed      **DOF:**  
6/10/1976  
**First Party:** Airo-Jet Industrial City, Inc., a Florida corporation  
**Second Party:** Kanter Corporation of Florida, a Florida corporation
18. **Book and Page:** OR 6636/484      **TOI:** Warranty Deed      **DOF:** 6/29/1976  
**First Party:** Airo-Jet Industrial City, Inc., a Florida corporation  
**Second Party:** Kanter Corporation of Florida, a Florida corporation
19. **Book and Page:** OR 7861/499      **TOI:** Warranty Deed      **DOF:** 11/8/1978  
**First Party:** Airo-Jet Industrial City, Inc., a Florida corporation  
**Second Party:** Kanter Corporation of Florida, a Florida corporation
20. **Book and Page:** OR 10025/697      **TOI:** Warranty Deed      **DOF:** 2/10/1982  
**First Party:** Kanter Corporation of Florida, Inc., a Florida corporation  
**Second Party:** George Zuckman
21. **Book and Page:** OR 10747/257      **TOI:** Warranty Deed      **DOF:** 3/24/1983  
**First Party:** The Kanter Corporation of Florida, a Florida corporation  
**Second Party:** The Kanter Corporation, an Ohio corporation



**File Number:** PA2014-722a  
**Reference:** M-FL144488

- 22. Book and Page:** OR 24951/956      **TOI:** Warranty Deed      **DOF:** 6/3/1996  
**First Party:** George Zuckman and Ethel Zuckman  
**Second Party:** Kanter Corporation of Florida, Inc., a Florida corporation
- 23. Book and Page:** OR 25163/919      **TOI:** Warranty Deed      **DOF:** 7/22/1996  
**First Party:** Kanter Corporation of Florida  
**Second Party:** Kanter Corporation, Inc., an Ohio corporation



DATE	DOCUMENT ID	DESCRIPTION	FILING	EXPED	PENALTY	CERT	COPY
04/29/2015	201511801319	Conversion Within SOS Records (CVS)	125.00	0.00	0.00	0.00	0.00

**Receipt**

This is not a bill. Please do not remit payment.

THOMPSON HINE LLP  
ATTN:CAROL R. RUSSELL  
41 S. HIGH STREET; #1700  
COLUMBUS, OH 43215

**STATE OF OHIO  
CERTIFICATE**

**Ohio Secretary of State, Jon Husted  
222697**

It is hereby certified that the Secretary of State of Ohio has custody of the business records for

**KANTER REAL ESTATE LLC**

and, that said business records show the filing and recording of:

Document(s)

**Conversion Within SOS Records**

Effective Date: 04/23/2015

Document No(s):

**201511801319**

CHANGE BUSINESS TYPE DOM. PROFIT LIM. LIAB. CO



United States of America  
State of Ohio  
Office of the Secretary of State

Witness my hand and the seal of the  
Secretary of State at Columbus, Ohio this  
29th day of April, A.D. 2015.

**Ohio Secretary of State**



Form 700 Prescribed by:  
**JON HUSTED**  
 Ohio Secretary of State  
 Central Ohio: (614) 465-3910  
 Toll Free: (877) SOS-FILE (767-3453)  
 www.OhioSecretaryofState.gov  
 Bussev@OhioSecretaryofState.gov

Make checks payable to Ohio Secretary of State

Mail this form to one of the following:  
 Regular Filing (non expedite)  
 P.O. Box 1328  
 Columbus, OH 43216

Expedite Filing (Two-business day processing  
 time requires an additional \$100.00).  
 P.O. Box 1390  
 Columbus, OH 43216

**Certificate for Conversion for Entities Converting  
 Within or Off the Records of the Ohio Secretary of State  
 Filing Fee: \$125**

(CHECK ONLY ONE (1) BOX)

(1) <input checked="" type="checkbox"/> <b>Converting Within The Records of the Ohio Secretary of State</b>	(2) <input type="checkbox"/> <b>Converting Off The Records of the Ohio Secretary of State</b> (187-VOC)
---	--

Name of the converting entity	The Kanter Corporation		
Jurisdiction of Formation	Ohio		
Charter/Registration Number	222697		
<p>The converting entity is a:          (Check Only (1) One Box)</p> <table style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> <input checked="" type="checkbox"/> Domestic Corporation (For-Profit or Nonprofit)  <input type="checkbox"/> Foreign Corporation (For-Profit or Nonprofit)  <input type="checkbox"/> Domestic Nonprofit Limited Liability Company  <input type="checkbox"/> Foreign Nonprofit Limited Liability Company  <input type="checkbox"/> Domestic For-Profit Limited Liability Company  <input type="checkbox"/> Foreign For-Profit Limited Liability Company         </td> <td style="width: 50%; vertical-align: top;"> <input type="checkbox"/> Partnership  <input type="checkbox"/> Domestic Limited Partnership  <input type="checkbox"/> Foreign Limited Partnership  <input type="checkbox"/> Domestic Limited Liability Partnership  <input type="checkbox"/> Foreign Limited Liability Partnership         </td> </tr> </table> <p>The converting entity hereby states that it has complied with all laws in the jurisdiction under which it exists and that those laws permit the conversion.</p>		<input checked="" type="checkbox"/> Domestic Corporation (For-Profit or Nonprofit) <input type="checkbox"/> Foreign Corporation (For-Profit or Nonprofit) <input type="checkbox"/> Domestic Nonprofit Limited Liability Company <input type="checkbox"/> Foreign Nonprofit Limited Liability Company <input type="checkbox"/> Domestic For-Profit Limited Liability Company <input type="checkbox"/> Foreign For-Profit Limited Liability Company	<input type="checkbox"/> Partnership <input type="checkbox"/> Domestic Limited Partnership <input type="checkbox"/> Foreign Limited Partnership <input type="checkbox"/> Domestic Limited Liability Partnership <input type="checkbox"/> Foreign Limited Liability Partnership
<input checked="" type="checkbox"/> Domestic Corporation (For-Profit or Nonprofit) <input type="checkbox"/> Foreign Corporation (For-Profit or Nonprofit) <input type="checkbox"/> Domestic Nonprofit Limited Liability Company <input type="checkbox"/> Foreign Nonprofit Limited Liability Company <input type="checkbox"/> Domestic For-Profit Limited Liability Company <input type="checkbox"/> Foreign For-Profit Limited Liability Company	<input type="checkbox"/> Partnership <input type="checkbox"/> Domestic Limited Partnership <input type="checkbox"/> Foreign Limited Partnership <input type="checkbox"/> Domestic Limited Liability Partnership <input type="checkbox"/> Foreign Limited Liability Partnership		

RECEIVED  
 APR 23 PM 4:05  
 CLIENT SERVICES UNIT

Name of the converted entity

Jurisdiction of Formation

The converted entity is a:  
(Check Only (1) One Box)

<input type="checkbox"/> Domestic Corporation (For-Profit)	<input type="checkbox"/> Partnership
<input type="checkbox"/> Foreign Corporation (For-Profit or Nonprofit)	<input type="checkbox"/> Domestic Limited Partnership
<input type="checkbox"/> Domestic Nonprofit Limited Liability Company	<input type="checkbox"/> Foreign Limited Partnership
<input type="checkbox"/> Foreign Nonprofit Limited Liability Company	<input type="checkbox"/> Domestic Limited Liability Partnership
<input checked="" type="checkbox"/> Domestic For-Profit Limited Liability Company	<input type="checkbox"/> Foreign Limited Liability Partnership
<input type="checkbox"/> Foreign For-Profit Limited Liability Company	

Effective Date  (The conversion is effective upon the filing of this certificate or on a later date specified in the certificate)

Name and address of the person or entity that will provide a copy of the declaration of conversion upon written request.

Name

Mailing Address

City State Zip Code

**Required information that must accompany conversion certificate if box 2 is checked**

If the converting entity is a domestic or foreign entity that will not be licensed in Ohio, provide the name and address of the statutory agent upon whom any process, notice or demand may be served.

Name of Statutory Agent

Mailing Address

City State Zip Code

**See instructions for additional filing requirements if**

- (1) the conversion creates a new domestic entity,
- (2) the converted entity is a foreign entity that desires to transact business in Ohio; or
- (3) if a domestic corporation or foreign corporation licensed in Ohio is the converting entity.

IN WITNESS WHEREOF, the conversion is authorized on behalf of the converting entity and that each person signing the certificate of conversion is authorized to do so.

Required  
Must be signed by an  
authorized representative.

  
Signature

By (if applicable)

John E. Kanter, President  
Print Name

Signature

By (if applicable)

Print Name

Signature

By (if applicable)

Print Name

Complete the information in this section.

**AFFIDAVIT**

In lieu of dissolution releases from various governmental authorities.

**The Kenter Corporation**

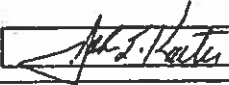
Name of Corporation

The undersigned, being first duly sworn, declares that on the dates indicated below, each of the named state governmental agencies was advised IN WRITING of the scheduled date of filing of the Certificate and was advised IN WRITING of the acknowledgement by the corporation of the applicability of the provisions of section 1701.95 of the ORC.

Agency	Date Notified	Agency	Date Notified
Ohio Bureau of Workers' Compensation 30 W. Spring Street Columbus, Ohio 43215	4/20/15	Ohio Job & Family Services Status and Liability Section Data Correspondence Control Fax: 614-752-4811 Phone: 614-466-2319 Overnight: P.O. Box 182413 Columbus, OH 43218-2413	4/20/15
*Only required for domestic for-profit corporations		Regular: P.O. Box 182413 Columbus, OH 43218-2413	
Ohio Department of Taxation Taxpayer Services Division/Tax Release Unit PO Box 182382 Columbus, OH 43218-2382 Dissolution@tax.state.oh.us		<input checked="" type="checkbox"/> The corporation is not required to pay or the department of taxation has not assessed any personal property tax.	
*Complete this date notified field only if the corporation is a domestic non-profit corporation or foreign corporation. [see* note below]			

\*Note: Domestic for-profit corporations must submit with this filing a Certificate of Tax Clearance issued by the Ohio Department of Taxation.

Note: This affidavit must be signed by one or more persons executing the certificate or by an officer of the corporation.

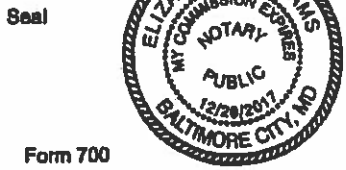
Signature  Title **President**

Name **John E. Kenter**

Mailing Address **2601 S. Bayshore Drive, Suite 1450**

City **Miami** State **FL** Zip Code **33133**

Acknowledged before me and subscribed in my presence on **4-22-2015**  
Date



 Commission Expires **12/26/17**  
Notary Public Date





Department of  
Taxation

Taxpayer Services Division  
P.O. Box 182382  
Columbus, Ohio 43218-2382  
Phone: 888-405-4039  
TTY/TDD: 800-750-0750  
<http://tax.ohio.gov>

### CERTIFICATE OF TAX CLEARANCE

This certificate certifies that the below stated entity has filed all tax returns and paid in full all taxes and fees administered by the tax commissioner through the certificate issue date indicated below. Additional tax liabilities may be billed and/or assessed at a later date as a result of an examination or audit for any periods ending prior to the date of dissolution.

#### THE KANTER CORPORATION

Charter: 222697

Certificate issue date: March 24, 2015

A handwritten signature in black ink, appearing to read "Joseph W. Testa".

Joseph W. Testa  
Tax Commissioner

Note: This certificate must be filed along with all forms prescribed by the Ohio Secretary of State. For filing information, visit Ohio Secretary of State's web site at [OhioSecretaryofState.gov](http://OhioSecretaryofState.gov).





Form 533A Prescribed by:  
Ohio Secretary of State  
**JON HUSTED**  
Ohio Secretary of State

Central Ohio: (614) 466-3910  
Toll Free: (877) SOS-FILE (767-3453)  
www.OhioSecretaryofState.gov  
Busserv@OhioSecretaryofState.gov

Mail this form to one of the following:

Regular Filing (non expedite)  
P.O. Box 670  
Columbus, OH 43216

Expedite Filing (Two-business day processing  
time requires an additional \$100.00).  
P.O. Box 1390  
Columbus, OH 43216

### Articles of Organization for a Domestic Limited Liability Company

Filing Fee: \$125

CHECK ONLY ONE (1) BOX

(1)  Articles of Organization for Domestic  
For-Profit Limited Liability Company  
(115-LCA)

(2)  Articles of Organization for Domestic  
Nonprofit Limited Liability Company  
(115-LCA)

Name of Limited Liability Company

Name must include one of the following words or abbreviations: "limited liability company," "limited," "LLC," "L.L.C.," "Ltd.," or "Ltd"

Effective Date   
(Optional) mm/dd/yyyy

(The legal existence of the limited liability company begins upon the filing  
of the articles or on a later date specified that is not more than ninety days  
after filing)

This limited liability company shall exist for   
(Optional) Period of Existence

Purpose   
(Optional)

**\*\*Note for Nonprofit LLCs**

The Secretary of State does not grant tax exempt status. Filing with our office is not sufficient to obtain state or federal tax exemptions. Contact the Ohio Department of Taxation and the Internal Revenue Service to ensure that the nonprofit limited liability company secures the proper state and federal tax exemptions. These agencies may require that a purpose clause be provided.

RECEIVED  
APR 23 PM 4:06  
LICENT SERVICE CENTER

**ORIGINAL APPOINTMENT OF AGENT**

The undersigned authorized member(s), manager(s) or representative(s) of

Kanter Real Estate LLC

Name of Limited Liability Company

hereby appoint the following to be Statutory Agent upon whom any process, notice or demand required or permitted by statute to be served upon the limited liability company may be served. The name and address of the agent is

C T Corporation System

Name of Agent

1300 East Ninth Street

Mailing Address

Cleveland

City

Ohio

State

44114

ZIP Code

**ACCEPTANCE OF APPOINTMENT**

The undersigned, C T Corporation System named herein as the statutory agent

Statutory Agent Name

for Kanter Real Estate LLC

Name of Limited Liability Company

hereby acknowledges and accepts the appointment of agent for said limited liability company

Statutory Agent Signature *Kristin Bolden* Kristin Bolden  
Assistant Secretary

Individual Agent's Signature / Signature on Behalf of Business Serving as Agent

By signing and submitting this form to the Ohio Secretary of State, the undersigned hereby certifies that he or she has the requisite authority to execute this document.

Required Articles and original appointment of agent must be signed by a member, manager or other representative.

*[Handwritten Signature]*  
Signature

[Empty Signature Box]

By (if applicable)

If authorized representative is an individual, then they must sign in the "signature" box and print their name in the "Print Name" box.

John E. Kanter, Authorized Representative

Print Name

If authorized representative is a business entity, not an individual, then please print the business name in the "signature" box, an authorized representative of the business entity must sign in the "By" box and print their name in the "Print Name" box.

[Empty Signature Box]

Signature

[Empty Signature Box]

By (if applicable)

[Empty Signature Box]

Print Name

[Empty Signature Box]

Signature

[Empty Signature Box]

By (if applicable)

[Empty Signature Box]

Print Name

67- 54399

OFF REC. 3440 PAGE 545

# This Indenture

Made this Thirty-first day of MAY, A. D. 1967,

Between ALLSTATE DREDGE CO.

a corporation existing under the laws of the State of Florida having its principal place of business in the County of Dade and State of Florida party of the first part, and

AIRO JET INDUSTRIAL CITY, INC., a Florida corporation 1040 S.W. 27th Ave - Miami, Fla.

of the County of Dade and State of Florida part of the second part,

Handwritten note: 150.00 / 165.00 OVER

Witnesseth, That the said party of the first part, for and in consideration of the sum of Ten dollars and other valuable considerations ~~has granted~~, to it in hand paid, the receipt whereof is hereby acknowledged, has granted, bargained, sold, aliened, remised, released, conveyed and confirmed, and by these presents doth grant, bargain, sell, alien, remise, release, convey and confirm unto the said party of the second part, and its successors ~~herein~~ and assigns forever, all that certain parcel of land lying and being in the County of BROWARD and State of Florida, more particularly described as follows:

All West of Canal less FEC R/w Sec. 2, Twp. 50-S, Rge 37-E; All, less FEC R/w Sec. 3, Twp. 50-S, Rge 37-E; All Sec. 4, 5, 9 and 10, Twp. 50-S, Rge 37-E; All West of Canal less F.E.C R/w Sec. 11, Twp. 50-S, Rge 37-E; All West of Canal, less FEC R/w Sec. 12, Twp. 50-S, Rge 37-E; All West of Canal less FEC R/w Sec. 13, Twp. 50-S, Rge 37-E; All of Sec. 14, 15, 23, 24, 25 and 36 Twp. 50-S, Rge 37-E; All of Sec. 13 East of Canal, Twp. 50-S, Rge 37-E; All West of Canal Sec. 19, Twp. 50-S, Rge 38-E; All East of Canal Sec. 19, Twp. 50-S, Rge 38-E; North 1/2 Sec. 28 and 29, Twp. 50-S, Rge 38-E; North 1/2 Sec. 30, East of Canal, less FEC R/w Twp. 50-S, Rge 38-E; North 1/2 Sec. 30 West of Canal less FEC R/w Twp. 50-S, Rge 38-E; South 1/2 Sec. 7, 8, 9 and 10, Twp. 51-S, Rge 38-E; South 1/2 Sec. 11, less FEC R/w Twp. 51-S, Rge 38-E; All of Sec. 14, less FEC R/w Twp. 51-S, Rge 38-E; All of Sec. 15, 16, 17, 18, 19, 20, 21, 22 and 23 Twp. 51-S, Rge 38-E; North 1/2 Sec. 26, 27, 28 and 29, Twp. 51-S, Rge 38-E; and the North 1/2 Sec. 30, less FEC R/w Twp. 51-S, Rge 38-E, comprising of approximately 20,000 Acres, more or less.

This deed is given subject to a mortgage.

Subject to an easement granted Central & Southern Florida Flood Control District, recorded in Book 711, page 282, ALSO subject to a lease recorded in Book 3001, page 415 of the public records of BROWARD COUNTY, Florida.

IT IS UNDERSTOOD AND AGREED THAT THOMAS L. TATHAM RETAINS AN INTEREST IN THE ABOVE DESCRIBED PROPERTY AND THAT NO CONVEYANCE OR ENCUMBRANCE PLACED ON THE PROPERTY DESCRIBED HEREIN, SHALL BE EFFECTIVE WITHOUT THE JOINER OF THOMAS L. TATHAM, SECTY OF AIRO JET INDUSTRIAL CITY, INC., OR C.S. DEED IS FORTHCOMING FROM THOMAS L. TATHAM UPON PAYMENT OF A SUM CERTAIN. Together with all the tenements, hereditaments and appurtenances, with every privilege, right, title, interest and estate, reversion, remainder and easement thereto belonging or in anywise appertaining:

To Have and to Hold the same in fee simple forever.

And the said party of the first part doth covenant with the said party of the second part that it is lawfully seized of the said premises; that they are free of all incumbrances, and that it has good right and lawful authority to sell the same; and the said party of the first part does hereby fully warrant the title to said land, and will defend the same against the lawful claims of all persons whomsoever.

In Witness Whereof, the said party of the first part has caused these presents to be signed in its name by its President, and its corporate seal to be affixed, attested by its the day and year above written.

(Corporate Seal)

Attest: Emma Field Secretary

ALLSTATE DREDGE CO.

By Thomas L. Tatham President.

Signed, Sealed and Delivered in Our Presence:

Minerva Keagy  
Jan Martinez

THOMAS L. TATHAM  
1040 S.W. 27th Ave  
MIAMI, FL 33135

67 JUN 12 AM 10:10

Handwritten number: 524

State of Florida,

REC. 3440 PAGE 546

County of D A D E

I HEREBY CERTIFY, That on this 31st day of May A. D. 19 67, before me personally appeared Thomas L. Tatham and Emma Field President and Secretary respectively of ALLSTATE DREDGE CO., a corporation under the laws of the State of Florida, to me known to be the persons described in and who executed the foregoing conveyance to

AIRO JET INDUSTRIAL CITY, INC., a Florida corporation

and severally acknowledged the execution thereof to be their free act and deed as such officers, for the uses and purposes therein mentioned; and that they affixed thereto the official seal of said corporation, and the said instrument is the act and deed of said corporation.

WITNESS my signature and official seal at Miami in the County of Dade and State of Florida, the day and year last aforesaid.

*John Martinez*  
Notary Public

My Commission Expires

NOTARY PUBLIC, STATE OF FLORIDA at LARGE  
MY COMMISSION EXPIRES APR. 3, 1970  
BONDED THROUGH FRED W. GIBTELIGRET

RECORDED IN OFFICIAL RECORDS BOOK  
OF BROWARD COUNTY, FLORIDA  
JACK WHEELER  
CLERK OF CIRCUIT COURT



BROWARD COUNTY STATE OF FLORIDA DOCUMENTARY STAMP TAX \$5400  
FLORIDA STAMP TAX \$9900  
FLORIDA STAMP TAX \$9900  
FLORIDA STAMP TAX \$9900  
FLORIDA STAMP TAX \$9900

On this \_\_\_\_\_ day of \_\_\_\_\_ A. D. 19 \_\_\_\_\_ at \_\_\_\_\_ o'clock \_\_\_\_\_ m., this instrument was filed for record, and being duly acknowledged and proven, I have recorded the same on pages \_\_\_\_\_ of Book \_\_\_\_\_ in the public records of said County. In Witness Whereof, I have hereunto set my hand and affixed the seal of the Circuit Court of the Judicial Circuit of said State, in and for said County.

STATE OF FLORIDA,  
County of \_\_\_\_\_


**Guaranty Trust**  
FROM CORPORATION

D. O. Clerk.



DATE	DOCUMENT ID	DESCRIPTION	FILING	EXPED	PENALTY	CERT	COPY
04/29/2015	201511801319	Conversion Within SOS Records (CVS)	125.00	0.00	0.00	0.00	0.00

**Receipt**

This is not a bill. Please do not remit payment.

THOMPSON HINE LLP  
ATTN:CAROL R. RUSSELL  
41 S. HIGH STREET; #1700  
COLUMBUS, OH 43215

**STATE OF OHIO  
CERTIFICATE**

**Ohio Secretary of State, Jon Husted**

222697

It is hereby certified that the Secretary of State of Ohio has custody of the business records for

**KANTER REAL ESTATE LLC**

and, that said business records show the filing and recording of:

Document(s)

**Conversion Within SOS Records**

Effective Date: 04/23/2015

CHANGE BUSINESS TYPE DOM. PROFIT LIM. LIAB. CO.

Document No(s):

**201511801319**



United States of America  
State of Ohio  
Office of the Secretary of State

Witness my hand and the seal of the  
Secretary of State at Columbus, Ohio this  
29th day of April, A.D. 2015.

**Ohio Secretary of State**



Form 700 Prescribed by:  
**JON HUSTED**  
 Ohio Secretary of State  
 Central Ohio: (614) 466-3910  
 Toll Free: (877) SOS-FILE (767-3453)  
 www.OhioSecretaryofState.gov  
 Busserv@OhioSecretaryofState.gov

Makes checks payable to Ohio Secretary of State

Mail this form to one of the following:  
 Regular Filing (non expedite)  
 P.O. Box 1329  
 Columbus, OH 43216

Expedite Filing (Two-business day processing time requires an additional \$100.00).  
 P.O. Box 1390  
 Columbus, OH 43216

**Certificate for Conversion for Entities Converting  
 Within or Off the Records of the Ohio Secretary of State  
 Filing Fee: \$125**

(CHECK ONLY ONE (1) BOX)

(1)  **Converting Within The Records of the Ohio Secretary of State**

(2)  **Converting Off The Records of the Ohio Secretary of State**  
 (187-VXX)

Name of the converting entity

Jurisdiction of Formation

Charter/Registration Number

The converting entity is a:  
 (Check Only (1) One Box)

<input checked="" type="checkbox"/> Domestic Corporation (For-Profit or Nonprofit)	<input type="checkbox"/> Partnership
<input type="checkbox"/> Foreign Corporation (For-Profit or Nonprofit)	<input type="checkbox"/> Domestic Limited Partnership
<input type="checkbox"/> Domestic Nonprofit Limited Liability Company	<input type="checkbox"/> Foreign Limited Partnership
<input type="checkbox"/> Foreign Nonprofit Limited Liability Company	<input type="checkbox"/> Domestic Limited Liability Partnership
<input type="checkbox"/> Domestic For-Profit Limited Liability Company	<input type="checkbox"/> Foreign Limited Liability Partnership
<input type="checkbox"/> Foreign For-Profit Limited Liability Company	

The converting entity hereby states that it has complied with all laws in the jurisdiction under which it exists and that those laws permit the conversion.

RECEIVED  
 APR 23 PM 4:05  
 CLIENT SERVICE CENTER

Name of the converted entity

Jurisdiction of Formation

The converted entity is a:  
**(Check Only (1) One Box)**

Domestic Corporation (For-Profit)                       Partnership

Foreign Corporation (For-Profit or Nonprofit)                       Domestic Limited Partnership

Domestic Nonprofit Limited Liability Company                       Foreign Limited Partnership

Foreign Nonprofit Limited Liability Company                       Domestic Limited Liability Partnership

Domestic For-Profit Limited Liability Company                       Foreign Limited Liability Partnership

Foreign For-Profit Limited Liability Company

Effective Date  (The conversion is effective upon the filing of this certificate or on a later date specified in the certificate)

Name and address of the person or entity that will provide a copy of the declaration of conversion upon written request.

Name

Mailing Address

                                             
City    State    Zip Code

**Required information that must accompany conversion certificate if box 2 is checked**

If the converting entity is a domestic or foreign entity that will not be licensed in Ohio, provide the name and address of the statutory agent upon whom any process, notice or demand may be served.

Name of Statutory Agent

Mailing Address

                                             
City    State    Zip Code

**See instructions for additional filing requirements if**

(1) the conversion creates a new domestic entity,

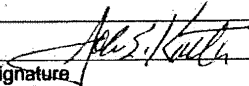
(2) the converted entity is a foreign entity that desires to transact business in Ohio; or

(3) if a domestic corporation or foreign corporation licensed in Ohio is the converting entity.



IN WITNESS WHEREOF, the conversion is authorized on behalf of the converting entity and that each person signing the certificate of conversion is authorized to do so.

**Required**  
Must be signed by an  
authorized representative.

  
Signature

By (if applicable)

John E. Kanter, President

Print Name

Signature

By (if applicable)

Print Name

Signature

By (if applicable)

Print Name

Complete the information in this section.

**AFFIDAVIT**

In lieu of dissolution releases from various governmental authorities.

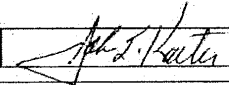
The Kanter Corporation  
Name of Corporation

The undersigned, being first duly sworn, declares that on the dates indicated below, each of the named state governmental agencies was advised IN WRITING of the scheduled date of filing of the Certificate and was advised IN WRITING of the acknowledgement by the corporation of the applicability of the provisions of section 1701.95 of the ORC.

Agency	Date Notified	Agency	Date Notified
Ohio Bureau of Workers' Compensation 30 W. Spring Street Columbus, Ohio 43215  *Only required for domestic for-profit corporations	4/20/15	Ohio Job & Family Services Status and Liability Section Data Correspondence Control Fax: 614-752-4811 Phone: 614-466-2319 Overnight: P.O. Box 182413 Columbus, OH 43218-2413	4/20/15     Regular: P.O. Box 182413 Columbus, OH 43218-2413
Ohio Department of Taxation Taxpayer Services Division/Tax Release Unit PO Box 182382 Columbus, OH 43218-2382 Dissolution@tax.state.oh.us  *Complete this date notified field only if the corporation is a domestic non-profit corporation or foreign corporation. [see* note below]		<input checked="" type="checkbox"/> The corporation is not required to pay or the department of taxation has not assessed any personal property tax.	

\*Note: Domestic for-profit corporations must submit with this filing a Certificate of Tax Clearance issued by the Ohio Department of Taxation.

Note: This affidavit must be signed by one or more persons executing the certificate or by an officer of the corporation.

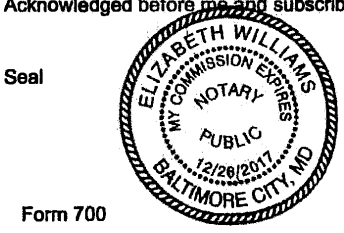
Signature  Title **President**


John E. Kanter  
Name

2601 S. Bayshore Drive, Suite 1450  
Mailing Address

Miami City FL 33133  
State Zip Code

Acknowledged before me and subscribed in my presence on 4-22-2015  
Date



  
Notary Public

Commission Expires 12/26/17  
Date

**AFFIDAVIT OF PERSONAL PROPERTY**

State of Maryland

County of Baltimore

John E. Kanter  
Name of Officer

President  
Title of Officer

of The Kanter Corporation  
Name of Corporation

and that this affidavit is made in compliance with Section 1701.86(H)(1) of the Ohio Revised Code.

That above-named corporation: (Check one (1) of the following)

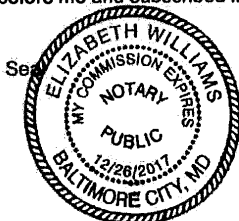
- Has no personal property in any county in Ohio
- Is the type required to pay personal property taxes to state authorities only
- Has personal property in the following county (ies)

Signature: [Handwritten Signature]

Title: President

Acknowledged before me and subscribed in my presence on

Date 4.22.15



[Handwritten Signature]  
Notary Public

Expiration date of Notary Public's Commission

Date 12/26/17



Department of  
Taxation

Taxpayer Services Division  
P.O. Box 182382  
Columbus, Ohio 43218-2382  
Phone: 888-405-4039  
TTY/TDD: 800-750-0750  
<http://tax.ohio.gov>

### CERTIFICATE OF TAX CLEARANCE

This certificate certifies that the below stated entity has filed all tax returns and paid in full all taxes and fees administered by the tax commissioner through the certificate issue date indicated below. Additional tax liabilities may be billed and/or assessed at a later date as a result of an examination or audit for any periods ending prior to the date of dissolution.

#### **THE KANTER CORPORATION**

**Charter: 222697**

Certificate issue date: **March 24, 2015**

A handwritten signature in black ink, appearing to read "Joseph W. Testa".

Joseph W. Testa  
Tax Commissioner

Note: This certificate must be filed along with all forms prescribed by the Ohio Secretary of State. For filing information, visit Ohio Secretary of State's web site at [OhioSecretaryofState.gov](http://OhioSecretaryofState.gov).



Form 533A Prescribed by:  
Ohio Secretary of State  
**JON HUSTED**  
Ohio Secretary of State

Central Ohio: (614) 466-3910  
Toll Free: (877) SOS-FILE (767-3453)  
www.OhioSecretaryofState.gov  
Busserv@OhioSecretaryofState.gov

Mail this form to one of the following:

Regular Filing (non expedite)  
P.O. Box 670  
Columbus, OH 43216

Expedite Filing (Two-business day processing  
time requires an additional \$100.00).  
P.O. Box 1390  
Columbus, OH 43216

### Articles of Organization for a Domestic Limited Liability Company

Filing Fee: \$125

CHECK ONLY ONE (1) BOX

(1)  Articles of Organization for Domestic  
For-Profit Limited Liability Company  
(115-LCA)

(2)  Articles of Organization for Domestic  
Nonprofit Limited Liability Company  
(115-LCA)

Name of Limited Liability Company

Name must include one of the following words or abbreviations: "limited liability company," "limited," "LLC," "L.L.C.," "Ltd.," or "Ltd"

Effective Date   
(Optional) mm/dd/yyyy

(The legal existence of the limited liability company begins upon the filing  
of the articles or on a later date specified that is not more than ninety days  
after filing)

This limited liability company shall exist for   
(Optional) Period of Existence

Purpose   
(Optional)

RECEIVED  
APR 23 PM 4:06  
CLIENT SERVICE CENTER

**\*\*Note for Nonprofit LLCs**

The Secretary of State does not grant tax exempt status. Filing with our office is not sufficient to obtain state or federal tax exemptions. Contact the Ohio Department of Taxation and the Internal Revenue Service to ensure that the nonprofit limited liability company secures the proper state and federal tax exemptions. These agencies may require that a purpose clause be provided.

### ORIGINAL APPOINTMENT OF AGENT

The undersigned authorized member(s), manager(s) or representative(s) of

Kanter Real Estate LLC

Name of Limited Liability Company

hereby appoint the following to be Statutory Agent upon whom any process, notice or demand required or permitted by statute to be served upon the limited liability company may be served. The name and address of the agent is

C T Corporation System

Name of Agent

1300 East Ninth Street

Mailing Address

Cleveland

City

Ohio

State

44114

ZIP Code

### ACCEPTANCE OF APPOINTMENT

The undersigned, C T Corporation System named herein as the statutory agent  
Statutory Agent Name

for Kanter Real Estate LLC  
Name of Limited Liability Company

hereby acknowledges and accepts the appointment of agent for said limited liability company

Statutory Agent Signature *Kristin Bolden* Kristin Bolden  
Assistant Secretary  
Individual Agent's Signature / Signature on Behalf of Business Serving as Agent

By signing and submitting this form to the Ohio Secretary of State, the undersigned hereby certifies that he or she has the requisite authority to execute this document.

**Required**

Articles and original appointment of agent must be signed by a member, manager or other representative.

*John E. Kanter, Authorized Representative*  
Signature

[Empty signature box]

By (if applicable)

If authorized representative is an individual, then they must sign in the "signature" box and print their name in the "Print Name" box.

John E. Kanter, Authorized Representative

Print Name

If authorized representative is a business entity, not an individual, then please print the business name in the "signature" box, an authorized representative of the business entity must sign in the "By" box and print their name in the "Print Name" box.

[Empty signature box]

Signature

[Empty signature box]

By (if applicable)

[Empty signature box]

Print Name

[Empty signature box]

Signature

[Empty signature box]

By (if applicable)

[Empty signature box]

Print Name

**Know all men by these presents:**

**THAT** THE KANTER CORPORATION OF FLORIDA, a Florida corporation of Dade County, Florida, in consideration of One Dollar (\$1.00) and other valuable consideration to it in hand paid by THE KANTER CORPORATION, an Ohio corporation, whose address is 4700 Ashwood Drive-Suite 400, Cincinnati, Ohio 45241, **does hereby GRANT, BARGAIN, SELL and CONVEY** to the said The Kanter Corporation,

its successors ~~XXXXXXXXXX~~ and assigns forever, the following described REAL ESTATE,<sup>(1)</sup>

- Situated in the County of Broward, State of Florida, and being further described as:
- All, west of Canal less F.R.C. R/W Section 2, Township 50 South, Range 37 East, containing 537.00 acres of land.
- All, less F.R.C. R/W Section 3, Township 50 South, Range 37 East, containing 638.75 acres of land.
- All of Sections 4, 5, 9 and 10, Township 50 South, Range 37 East, containing 2,560 acres of land.
- All west of Canal less F.R.C. R/W Section 11, Township 50 South, Range 37 East, containing 618.00 acres of land.
- All of Sections 14, 15, 16, 21, 22 and 23 Township 51 South, Range 38 East, containing 3,832.19 acres of land.
- South 1/2 Section 11, less F.R.C. R/W Township 51 South, Range 38 East, containing 314.95 acres of land.
- South 1/2 Section 10, Township 51 South, Range 38 East, containing 320.00 acres of land.
- North 1/2 Sections 26, 27 and 28 Township 51 South, Range 38 East, containing 960 acres of land.
- Northeast quarter of Section 29; the east 1/2 of the northwest quarter and the southwest quarter of the northwest quarter of Section 29, all in Township 51 South, Range 38 East, containing 290 acres of land.

**EXCEPTING THEREFROM:**

The north 1/2 of Sections 26 and 27, Township 51 South, Range 38 East, containing 640 acres of land. \*

*Subject to restrictions, reservations, agreements, and easements of record, if any, and zoning restrictions, legal highways, and such taxes and assessments as the grantees are to pay, as provided herein.*

\* The North 294.25 acres of Section 9, Township 50 South, Range 37 East, East 1/2 Section 23, Township 51 South, Range 38 East, containing 320 acres of land. The north 25 acres of the west 1/2 of the northwest 1/4 of Section 5, Township 50 South, Range 37 East, and all the **ESTATE, RIGHT, TITLE and INTEREST** of the said grantor in and to said premises; **TO HAVE AND TO HOLD** the same, with all the privileges and appurtenances thereunto belonging, to said grantee, its ~~their~~ successors and assigns forever. And the said

The Kanter Corporation of Florida, for itself, its successors, and assigns **does hereby COVENANT and WARRANT** that the title so conveyed is **CLEAR, FREE and UNINCUMBERED**, and that it will **DEFEND** the same against all lawful claims of all persons whomsoever, excepting taxes and assessments due and payable ~~to~~ ~~XXXXXX~~ which the grantee(s) herein assume(s) and agree(s) to pay.

<sup>(1)</sup> Include reference to volume and page of most preceding recorded instrument through which grantor claims title. (R.C. § 319.22)

*Witness my hand and seal this \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_*

10747 PG 257

DEC 10 7 47 PM '257



IN WITNESS WHEREOF, the said The Kanter Corporation of Florida, grantor, has caused its corporate name to be hereunto subscribed by Fred H. Adler, its Treasurer, its Vice-President, and R. E. Wildermuth, Directors, this 1st day of March, in the year A.D. nineteen hundred and eighty three (1983).

Signed and acknowledged in presence of: THE KANTER CORPORATION OF FLORIDA  
*Juanita D. ...*  
*Fred H. Adler*  
 Fred H. Adler, Vice-President  
*R. E. Wildermuth*  
 R. E. Wildermuth, Treasurer

THE STATE OF OHIO COUNTY OF HAMILTON  
 BE IT REMEMBERED, That on this 1st day of March, in the year of our Lord, one thousand nine hundred and eighty-three (1983), before me, the subscriber, a Notary Public in and for said County and State, personally appeared Fred H. Adler, Vice-President, and R. E. Wildermuth, Treasurer, of the Kanter Corporation of Florida, the corporation,

whose name is subscribed to and which executed the foregoing instrument, and for themselves and as such officers respectively, and for and on behalf of said corporation, acknowledged the signing and execution of said instrument; and acknowledged that they executed, said instrument, by authority of the Board of Directors, and on behalf, of said corporation; and that the signing and execution of said instrument is their free and voluntary act and deed, their free act and deed as such officers of said corporation, and voluntary act and deed of said corporation, for the use and purpose in said instrument mentioned.

This instrument prepared by Fred H. Adler (jm)

IN TESTIMONY WHEREOF, I have hereunto subscribed my name and official seal of the day and year last aforesaid.  
 Notary Public, State of Ohio  
 My Commission Expires 11/17/1987

RECORDED IN THE OFFICIAL RECORDS ROOM OF DECATUR COUNTY, FLORIDA  
 F. T. JOHNSON  
 COUNTY ADMINISTRATOR

Warranted Deed  
 From THE KANTER CORPORATION OF FLORIDA  
 To THE KANTER CORPORATION  
 Transferred 19  
 County Auditor.  
 STATE OF OHIO COUNTY OF HAMILTON  
 Presented for record on the 1st day of March, 1983  
 of Elizabeth, M.  
 Recorded 19  
 in Deed Book No. Page  
 County Recorder.  
 REC 10747FG 258

75- 75751

# Warranty Deed

This Indenture, Made, this 16<sup>th</sup> day of April, A. D. 1975,

BETWEEN AIRO-JET INDUSTRIAL CITY, INC.

, a corporation

existing under the laws of the State of Florida, having its principal place of business in the County of Dade and State of Florida,

and lawfully authorized to transact business in the State of Florida, party of the first part, and KANTER CORPORATION OF FLORIDA,

whose address is: 4700 Biscayne Boulevard, Miami, Florida, a corporation existing under the laws of the State of Florida, having its

principal place of business in the County of Dade and State of Florida,

and lawfully authorized to transact business in the State of Florida, party of the second part,

WITNESSETH: That the said party of the first part, for and in consideration of the sum of TEN (\$10.00) and other good and valuable consideration----- Dollars

to it in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged, has granted, bargained and sold to the said party of the second part, its successors and assigns forever, the following described land situate, lying and being in the County of Broward

and State of Florida, to-wit:

The East one-half (1/2) of Section 23, and the South 211 acres of the East 1/2 of Section 14, in Township 51 South, Range 38 East, Broward County, Florida.

SUBJECT TO:

1. Taxes for the year 1975 and subsequent years; and
2. Easements, restrictions, and dedication of record.



And the said party of the first part does hereby fully warrant the title to said land, and will defend the same against the lawful claims of all persons whomsoever.

This Instrument prepared by:  
Address



75 MAY 1 PM 2:28

OFF REC. 6189 PAGE 30

bx

In Witness Whereof, the said party of the first part has caused these presents to be signed in its name by its proper officers, and its corporate seal to be affixed, attested by its Secretary, the day and year above written.

AIRO-JET INDUSTRIAL CITY, INC.

Attest: John S. Durkin  
Secretary.

By [Signature]  
President.

Signed, sealed and delivered in the presence of us:

Margaret J. Karnes  
[Signature]

State of ~~Florida~~, OHIO

County of ~~DADE~~ HAMILTON

I Hereby Certify, that on this 16th day of April

A. D. 1975, before me personally appeared R. E. Wildermuth

and John S. Durkin President and Secretary respectively of

AIRO-JET INDUSTRIAL CITY, INC., a corporation under the laws of

the State of Florida, to me known to be the persons who signed the foregoing instrument as such officers and severally acknowledged the execution thereof to be their free act and deed as such officers for the uses and purposes therein mentioned and that they affixed thereto the official seal of said corporation, and that the said instrument is the act and deed of said corporation.

Witness my hand and official seal at Cincinnati,

in the County of Hamilton and State of ~~Florida~~ Ohio the day and year last aforesaid.

RECORDED IN THE OFFICIAL RECORDS BOOK  
OF BROWARD COUNTY, FLORIDA  
H. R. KAUTH  
COUNTY ADMINISTRATOR

Margaret J. Karnes (Seal)  
NOTARY PUBLIC, State of  
~~Florida~~ Ohio MARGARET J. KARNES  
Notary Public: Hamilton County, Ohio  
My Commission Expires Nov. 20, 1978

Warranty Deed  
FROM CORPORATION TO CORPORATION  
FROM  
TO  
Date  
ABSTRACT OF DESCRIPTION

OFF. REC. 6189 PAGE 31

WARRANTY DEED FROM CORPORATION

75-141159 **Warranty Deed**

This Indenture, Made this 28th day of July, A.D. 1975

Between **AIRO-JET INDUSTRIES, INC.**, a corporation existing under the laws of the State of Florida, having its principal place of business in the County of Dade and State of Florida and lawfully authorized to transact business in the State of Florida, party of the first part, and

**KANTER CORPORATION OF FLORIDA**  
4700 Biscayne Boulevard  
Miami, Florida, 33137  
of the County of Dade and State of Florida

part y of the second part **Witnesseth:**  
That the said party of the first part, for and in consideration of the sum of TEN (\$10.00) Dollars,

to it in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged has granted, bargained and sold to the said party of the second part, its heirs and assigns forever, the following described land situated, lying and being in the County of Broward and State of Florida, to-wit:

- South one-half (1/2) of Section 11, less FEC R/W, Township 51 South, Range 38 East;
- East one-half (1/2) of Section 14, less FEC R/W Township 51 South, Range 38 East, and
- The North 186.99 acres of the West one-half (W 1/2) of Section 14, less FEC R/W, Township 51 South, Range 38 East, all located in Broward County, Florida

SUBJECT TO: (1) Taxes for the year 1975 and subsequent years;  
(2) Easements, restrictions and dedications of record.

And the said party of the first part do hereby fully warrant the title to said land, and will defend the same against the lawful claims of all persons whomsoever.

In Witness Whereof, the said party of the first part has caused these presents to be signed in its name by its proper officers, and its corporate seal to be affixed, attested by its secretary, the day and year above written.

Attest: *Fred H. Adler* Secretary **AIRO-JET INDUSTRIES, INC.**

Signed, sealed and delivered in presence of us: *Margaret J. Karnes* } *R. E. Wildermuth* }  
*John Wilson* } R. E. WILDERMUTH, President }  
 } *Fred H. Adler* (Seal) }  
 } FRED H. ADLER, Secretary }  
State of ~~Florida~~ OHIO: }  
County of HAMILTON } **SEAL**

I Hereby Certify that on this 28th day of A.D. 19 75, before me personally appeared R. E. WILDERMUTH and FRED H. ADLER, President and Secretary respectively of AIRO-JET INDUSTRIES, INC., a corporation under the laws of the State of Florida, to me known to be the persons who signed the foregoing instrument as such officers and severally acknowledged the execution thereof to be their free act and deed as such officers for the uses and purposes therein mentioned and that they affixed thereto the official seal of said corporation, and that the said instrument is the act and deed of said corporation.

Witness my signature and official seal at Cincinnati, Ohio in the County of Hamilton and State of Ohio the day and year last aforesaid.

My commission was prepared by: *Margaret J. Karnes*  
**MARGARET J. KARNES**  
Notary Public, Hamilton County, Ohio  
3501 Broadway Boulevard  
Miami, Florida 33137  
573-5900  
My Commission Expires Nov. 20, 1978  
Notary Public, State of ~~Florida~~ Ohio

73 AUG 6 PM 3:31

REF 6293 PAGE 928

304/

76 108262

CORRECTIVE  
**Warranty Deed**

This **Indenture**, Made, this 21st day of **May**, A. D. 1976.

**BETWEEN AIRO-JET INDUSTRIAL CITY, INC.,**

a corporation

existing under the laws of the State of **Florida**, having its principal place of  
business in the County of **Dade** and State of **Florida**.

and lawfully authorized to transact business in the State of Florida, party of the first part, and

**KANTER CORPORATION OF FLORIDA, 4700 Biscayne Blvd., Miami,**

**Florida 33137**, a corporation existing under the laws of the State of **Florida**, having its

principal place of business in the County of **Dade** and State of **Florida**

and lawfully authorized to transact business in the State of Florida, party of the second part.

**WITNESSETH** That the said party of the first part, for and in consideration of the sum of  
**Ten Dollars & other good and valuable considerations**

Dollars

to it in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged,

has granted, bargained and sold to the said party of the second part, its successors and assigns forever,

the following described land situated, lying and being in the County of **Broward**

and State of Florida, to-wit:

South one-half (1/2) of Section 11, less FEC R/W, Township 51  
South, Range 38 East;

East one-half (1/2) of Section 14, less FEC R/W, Township 51 South,  
Range 38 East, and

The North 186.99 acres of the West one-half (W 1/2) of Section 14,  
less FEC R/W, Township 51 South, Range 38 East, all located in  
Broward County, Florida.

**SUBJECT TO:** (1) Taxes for the year 1975 and subsequent years;  
(2) Easements, restrictions and dedications of record.

This Corrective Deed has been executed and delivered to correct a  
scrivener's error in that certain Warranty Deed dated July 28,  
1975, in favor of the Kanter Corporation of Florida, recorded  
under Clerk's File No. 75-141159, at Official Records Book 6293,  
page 928, of the Public Records of Broward County, Florida.

76 JUN 10 PM 2:48

REC 6616 PAGE 522

LAW OFFICES  
**LEVINE, RECKSON & REED, P.A.**  
3001 BISCAYNE BOULEVARD  
SUITE 200  
MIAMI, FLORIDA 33137

STATE OF FLORIDA  
DOCUMENTARY STAMP TAX  
RECEIPT OF RECEIPTS  
1 2 3 2  
00.30

FLORIDA  
SUR TAX  
00.50

And the said party of the first part does hereby fully warrant the title to said land, and will defend the  
same against the lawful claims of all persons whomsoever.

This Instrument prepared by: **Richard Izan Brickman**  
Address **3501 Biscayne Blvd., Miami, Fla. 33137**

In Witness Whereof, the said party of the first part has caused these presents to be signed in its name by its proper officers, and its corporate seal to be affixed, attested by its Secretary, the day and year above written.

Attest: Fred H. Adler Secretary. By R. E. Wildermuth President.

Signed, sealed and delivered in the presence of us:

State of Florida, OHIO

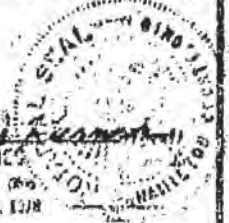
County of HAMILTON

I Herby Certify, that on this 1st day of June A. D. 1976, before me personally appeared R. E. Wildermuth and Fred H. Adler, President and Secretary respectively of

Airo-Jet Industrial City, Inc., a corporation under the laws of the State of Florida, to me known to be the persons who signed the foregoing instrument as such officers and personally acknowledged the execution thereof to be their free act and deed as such officers for the uses and purposes therein mentioned and that they affixed thereto the official seal of said corporation, and that the said instrument is the act and deed of said corporation.

Witness my hand and official seal at Cincinnati in the County of Hamilton and State of Ohio the day and year last aforesaid.

Margaret E. Kasper  
MARGARET E. KASPER  
Notary Public, State of Ohio  
My Comm. expires 03/29/1978



Warrant by DPFD  
FROM CORPORATION TO CORPORATION  
FROM TO  
Bated  
ABSTRACT OF DESCRIPTION

REC. 6616 PAGE 523

30  
55

76-128308 **Warranty Deed**

This Indenture, made this 14th day of June 4 D 1976

BETWEEN

AIRO-JET INDUSTRIAL CITY, INC.

a corporation

existing under the laws of the State of Florida

having its principal place of

business in the County of Dade

and State of Florida

and lawfully authorized to transact business in the State of Florida, party of the first part, and

KANTER CORPORATION OF FLORIDA, 4700 Biscayne Blvd., Miami

a corporation existing under the laws of the State of Florida

having its

principal place of business in the County of Dade

and State of Florida

and lawfully authorized to transact business in the State of Florida, party of the second part.

WITNESSETH That the said party of the first part, for and in consideration of the sum of

Ten Dollars & other good and valuable considerations

follow-

to it in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged,

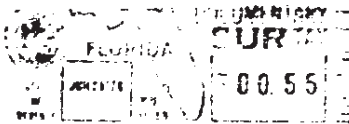
has granted, bargained and sold to the said party of the second part, its successors and assigns forever,

the following described land situate, lying and being in the County of Broward

and State of Florida, to-wit:

West one-half (1/2) of Section 23, Township 51-South,  
Range 38 East, and

East one-half (1/2) of Section 22, Township 51-South,  
Range 38 East; located in Broward County, Florida.



76 JUN 29 AM 10:20

OFF REC 6036 PAGE 401

2  
5

And the said party of the first part does hereby fully warrant the title to said land, and will defend the same against the lawful claims of all persons whomsoever.

This instrument prepared by: **Richard E. Beckson**  
Address 3501 Biscayne Blvd., Miami, Fla. 33137

In Witness Whereof, the said party of the first part has caused these presents to be signed in its name by its proper officers, and its corporate seal to be affixed, attested by its Secretary, the day and year above written

AIRO-JET INDUSTRIAL CITY, INC.

Attest: Fred H. Adler  
Fred H. Adler Secretary

By: R. E. Wildermuth  
R. E. Wildermuth President

Signed, sealed and delivered in the presence of us  
Margaret J. Haumbach  
Juditha M. ...

State of ~~MISSISSIPPI~~ OHIO

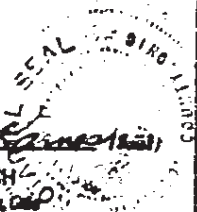
County of HAMILTON

I Herby Certify, that on this 14th day of June A. D. 1976, before me personally appeared R. E. Wildermuth and Fred H. Adler President and Secretary respectively of Airo-Jet Industrial City, Inc.

a corporation under the laws of the State of Florida, to me known to be the persons who signed the foregoing instrument as such officers and severally acknowledged the execution thereof to be their free act and deed as such officers for the uses and purposes therein mentioned and that they affixed thereto the official seal of said corporation, and that the said instrument is the act and deed of said corporation.

Witness my hand and official seal at Cincinnati, in the County of Hamilton, and State of Ohio this day and year last aforesaid.

Margaret J. Haumbach  
MARY J. HAUMBACH  
Notary Public, Hamilton County, Ohio  
My Commission Expires March 12, 1978



Warranty Deed  
FROM CORPORATION TO CORPORATION  
FROM  
TO  
Abstract of Description  
RANCO FORM 38.1

OTL REC 6638 PAGE 450



# Warranty Deed

78-292124

This Indenture, Made, this 30 day of October, A. D. 19 78.

BETWEEN AIRO-JET INDUSTRIAL CITY, INC.

a corporation

existing under the laws of the State of Florida, having its principal place of  
at 1132 West Kemper Road, Cincinnati, Ohio, 45240  
business in the County of \_\_\_\_\_ and State of \_\_\_\_\_

and lawfully authorized to transact business in the State of Florida, party of the first part, and  
THE KANTER CORPORATION OF FLORIDA

a corporation existing under the laws of the State of Florida, having its  
at 1132 West Kemper Road, Cincinnati, Ohio, 45240  
principal place of business in the County of \_\_\_\_\_ and State of \_\_\_\_\_

and lawfully authorized to transact business in the State of Florida, party of the second part,

WITNESSETH: That the said party of the first part, for and in consideration of the sum of  
TEN AND NO/100-----Dollars

to it in hand paid by the said party of the second part, the receipt whereof is hereby acknowledged,  
has granted, bargained and sold to the said party of the second part, its successors and assigns forever,  
the following described land situate, lying and being in the County of Broward

and State of Florida, to-wit:

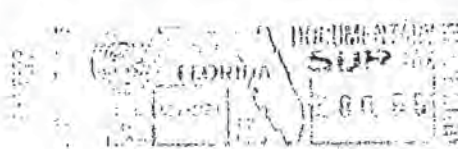
All of Section 15, Township 51 South, Range 38 East, Broward County,  
Florida,

AND

All of the acreage that has heretofore not been conveyed in Section 14,  
Township 51 South, Range 38 East (approximately 129.10 acres) the in-  
tent being that all of said Section 14, Township 51 South, Range 38  
East is hereby and heretofore being conveyed by the grantor herein to  
the named grantee.

Subject to:

Easements, conditions, restrictions, limitations, reservations, if  
any, of record.



And the said party of the first part does hereby fully warrant the title to said land, and will defend the  
same against the lawful claims of all persons whomsoever.

This Instrument prepared by:  
MILLCENT PELLE, ESQ.  
LEVINE, RECKSON & REED, P.  
3501 Biscayne Boulevard  
Miami, Florida 33137  
573-5500

RETURN TO:

78 OCT 30 PM 2:23

ME 7861 PAGE 499

In Witness Whereof, the said party of the first part has caused these presents to be signed in its name by its proper officers, and its corporate seal to be affixed, attested by its Secretary, the day and year above written.

Attest: Fred H. Adler Secretary. By R. E. Wildermuth President. AIRO-JET INDUSTRIAL CITY, INC.

Signed, sealed and delivered in the presence of us: Juanita M. Burdick

State of ~~Florida~~ Florida  
County of HAMILTON

I Hereby Certify, that on this 27th day of October A. D. 1978, before me personally appeared R. E. WILDERMUTH and Fred H. Adler, President and Secretary respectively of AIRO-JET INDUSTRIAL CITY, INC., a corporation under the laws of

the State of Florida, to me known to be the persons who signed the foregoing instrument as such officers and severally acknowledged the execution thereof to be their free act and deed as such officers for the uses and purposes therein mentioned and that they affixed thereto the official seal of said corporation, and that the said instrument is the act and deed of said corporation.

Witness my hand and official seal at Cincinnati in the County of Hamilton and State of Ohio the day and year last aforesaid.

JUANITA BURDICK Notary Public, State of Ohio My Commission Expires Feb. 8, 1982

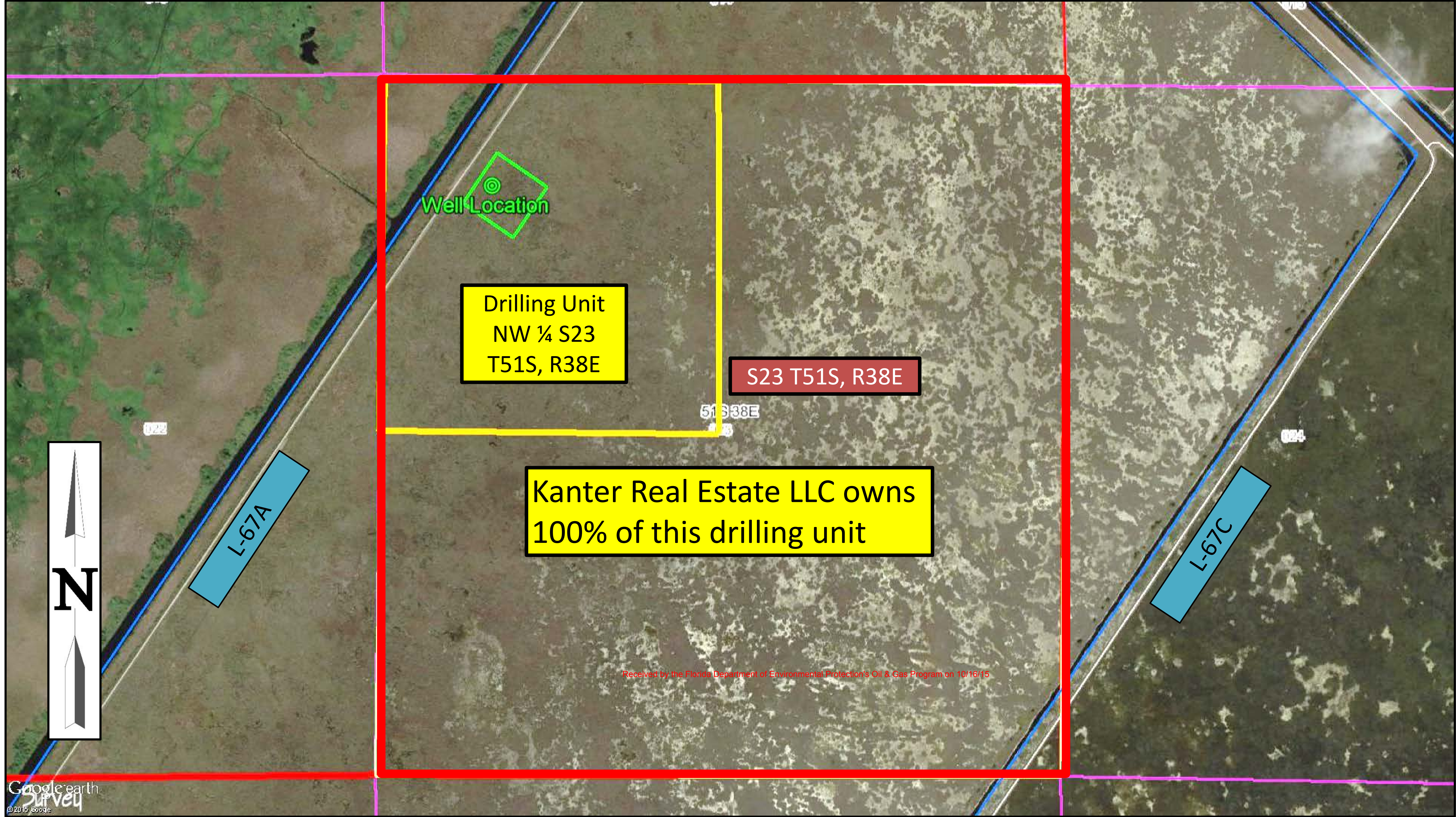


Blank area for recording details, including 'ABSTRACT OF DESCRIPTION' and 'FROM TO' fields.

RECORDED IN THE OFFICIAL RECORDS BOOK OF BROWARD COUNTY FLORIDA R. R. KAUTH COUNTY ADMINISTRATOR

FILE 7861 PAGE 50

#### 4.1 Location plat with mineral rights statement



**THE CAROL GROUP, INC**

*Professional Engineers and Surveyors*

**208 Dal Hall Boulevard  
Lake Placid, FL 33852**

**Kanter 23-2  
Drilling Unit  
Broward County, FL**

DATE:	PROJECT NO.
	FILE NO.
	SCALE

SHEET NUMBER

**4.1**

4.2(a) Plat using state plane coordinates

- NOTES:**
- [1] This is a new description.
  - [2] This boundary survey is to describe and stake out a 5.00 acre pad to support the location for a proposed well in the unsurveyed portion of the Everglades estimated to be within the northwest 1/4 of Section 23, Township 51 South, Range 38 East, Broward County, Florida.
  - [3] No search of the public records has been made by this office as to the vested ownership of this property. A search of the Broward County Property Appraiser's web site does not cover this land as indicating the taxable owner.
  - [4] This section was never surveyed by neither the Government Land Office nor the State of Florida. Sections lines shown hereon were scaled from the SFWMD L-67A RW map and are not to be considered as correct without a sectional survey.
  - [5] The bearings and distances referred to are grid U.S. Survey feet, Florida State Plane Coordinate System (FSPCS), East Zone, North American Datum of 1983 with the 2011 adjustment (NAD '83 2011). The bearing reference is a line from the found stainless steel rod identified as NGS point number FLGPS 68 to the found Corps of Engineers monument number FCE 1956 as being N34°38'52"E. The National Geodetic Survey monument designated as FLGPS 68 PID number AC4655 has a coordinate value of 593,190.53 feet north and 805,639.25 feet east as published in their data sheet retrieved August 12, 2014.
  - [6] All corners set are a 1" steel pipe with cap and brass disc stamped LB8003 unless otherwise indicated.
  - [7] The background image is the Mr. SID 2005 LABINS aerial.
  - [8] SFWMD is the abbreviation for South Florida Water Management District
  - [9] RW is the abbreviation for right of way.

**DESCRIPTION OF 5 ACRE TRACT**

A 5.0 acre parcel of land believed to be lying in the northwest 1/4 of the northwest 1/4 of un-surveyed Section 23, Township 51 South, Range 38 East, Broward County, Florida described as follows:

**COMMENCING** at a found NGS (National Geodetic Survey) 5/8" stainless steel rod accessed through a 5" aluminum logo cap stamped FLGPS 68 being further identified as PID AC4655 and having the NGS published data values of 593,190.53 feet north and 805,639.25 feet east, NAD '83 (North American Datum of 1983) 2011 adjustment and adjusted in June 2012; Thence run N34°38'52"E a distance of 12,727.51 feet to a found 6" steel pipe filled with concrete and having a COE (US Army Corps of Engineers) brass disk identified as FCE 1956 with state plane coordinate values of 803,660.96 feet north and 812,875.24 feet east; Thence S55°56'18"E a distance of 6.52 feet to the southeasterly L-67A right of way; Thence N34°03'42"E along said right of way a distance of 2,064.96 feet to a set 1" steel pipe with a brass disc stamped LB8003 for the **POINT OF BEGINNING** having a northing of 805,368.00 feet and an easting of 814,037.19 feet. From the **POINT OF BEGINNING** continue N34°03'42"E along said L-67A right of way a distance of 466.69 feet to a set 1" steel pipe with a brass disc stamped LB8003; Thence S55°56'18"E a distance of 466.69 feet to a set 1" steel pipe with a brass disc stamped LB8003; Thence S34°03'42"W a distance of 466.69 feet to a set 1" steel pipe with a brass disc stamped LB8003; Thence N55°56'18"W a distance of 466.69 feet to the **POINT OF BEGINNING**.

The bearings and distances referred to are grid U.S. Survey feet, Florida State Plane Coordinate System (FSPCS), East Zone, North American Datum of 1983 with the 2011 adjustment (NAD '83 2011). The bearing reference is a line from the found stainless steel rod identified as NGS point number FLGPS 68 to the found Corps of Engineers monument number FCE 1956 as being N34°38'52"E. The National Geodetic Survey monument designated as FLGPS 68 PID number AC4655 having a coordinate value of 593,190.53 feet north and 805,639.25 feet east as published in their data sheet retrieved August 12, 2014.

The majority of this Township has never been surveyed by neither the U.S. Government Land Office nor the State of Florida. The sectional information is based on the scaled locations of the section lines as drawn and shown on the Central and Southern Florida Flood Control District (now South Florida Water Management District) Levee L-67A Right-of-Way and TOPO Map, Drawing Number L-67A-1, Sheet 3 of 3, dated 10-5-60, with latest revision date 4-13-66. No determination can be made as to the accuracy of this sectional information without an original survey of the township and sections within.

**SURVEY FOR AND CERTIFIED TO:**  
Kanter Real Estate LLC  
2801 Bayshore Drive  
Suite 1450  
Miami, FL 33133

By: *Howard* Date: 09-08-2015  
For the firm: Orvell Howard, LS2867  
**THE CAROL GROUP INC., LB8003**  
208 Dal Hall Boulevard  
Lake Placid, FL 33852

Unless it bears the signature and the original raised seal of a Florida licensed surveyor and mapper this drawing, sketch, plat or map is for informational purposes only and is not valid. Copyright © 2015 by THE CAROL GROUP, INC.

**POINT OF COMMENCEMENT**  
FLGPS 68  
5/8" stainless steel rod  
Northing: 593,190.53'  
Easting: 805,639.25'

FCE 1956  
6" steel pipe with brass disc  
Northing: 803,660.96'  
Easting: 812,875.24'

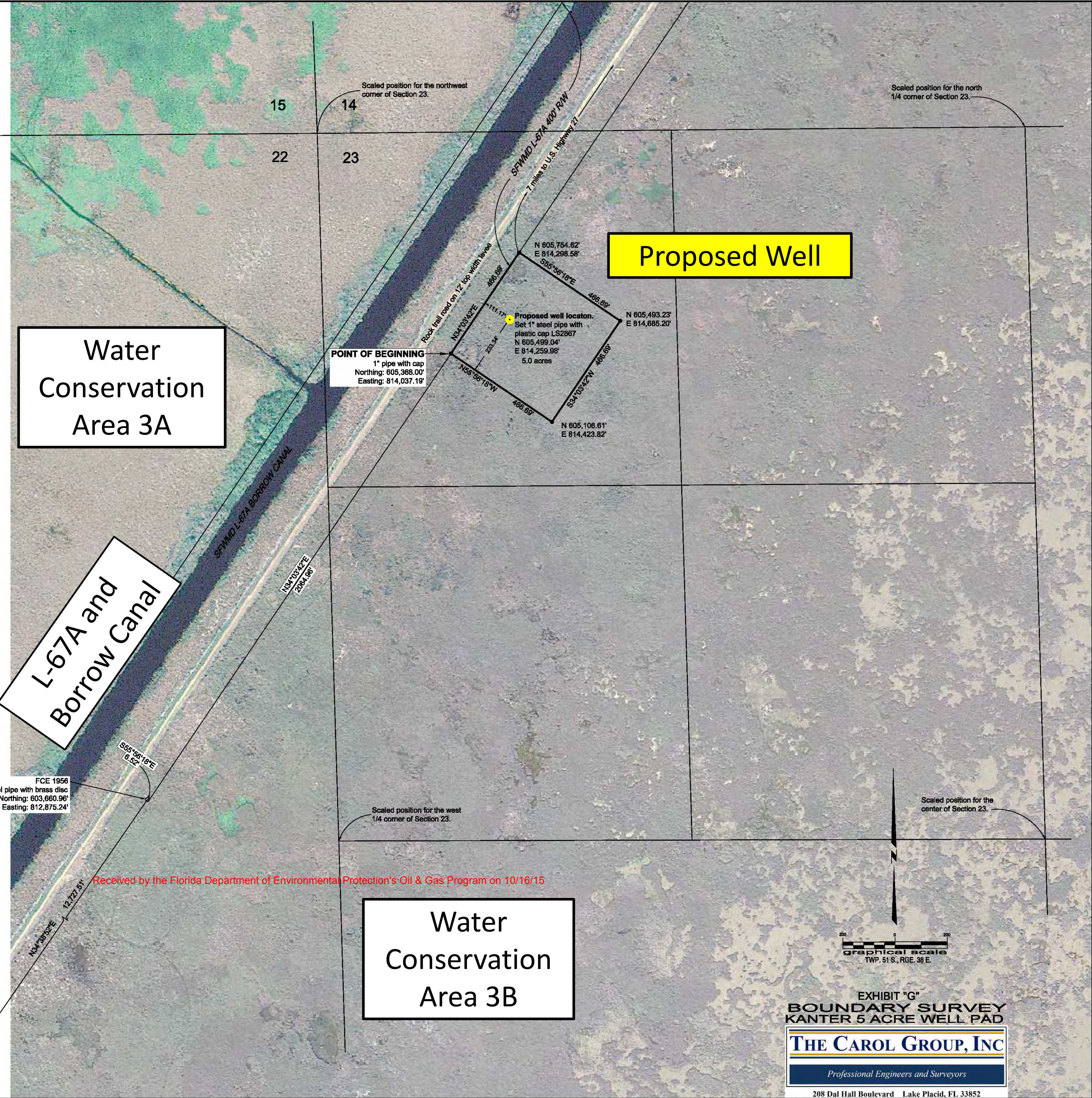
**POINT OF BEGINNING**  
1" pipe with cap  
Northing: 805,368.00'  
Easting: 814,037.19'

**Proposed Well**

**Water Conservation Area 3A**

**Water Conservation Area 3B**

**L-67A and Borrow Canal**



**THE CAROL GROUP, INC.**  
Professional Engineers and Surveyors  
208 Dal Hall Boulevard  
Lake Placid, FL 33852

**Kanter 23-2**  
**Site Boundary Survey**  
**Broward County, FL**

DATE:	PROJECT NO.
	FILE NO.
	SCALE

SHEET NUMBER  
**4.2(b)**

4.2(b) Plat with topographic information

NW Corner Sec 23, T51S, R38E

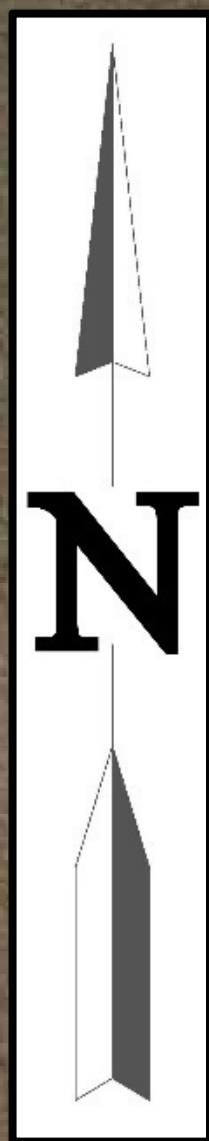
**PROPOSED WELL LOCATION**

FL EAST ZONE NAD '83  
GRID N:605499.04  
GRID E:814259.98



**Drilling Unit Boundary  
Routine**  
NW 1/2 Sec 23, T51S, R38E

L-67A



Google earth  
© 2015 Google

Received by the Florida Department of Environmental Protection's Oil & Gas Program on 10/18/15

**THE CAROL GROUP, INC**  
*Professional Engineers and Surveyors*  
**208 Dal Hall Boulevard  
Lake Placid, FL 33852**

**Kanter 23-2  
Drilling Unit  
w Spot Elevations  
Broward County, FL**

DATE:	
PROJECT NO.	
FILE NO.	
SCALE	

SHEET NUMBER  
**4.2(c)**



4.2(c) Written notice and explanation of survey hardship

October 16, 2015

Mr. Levi Sciara  
Florida Department of Environmental Protection  
Oil and Gas Program  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Via email

**RE: Kanter Real Estate, LLC Application for Permit to Drill No. 1366—Letter Notifying Department of Hardship Producing Quarter Sections for Survey**

Dear Mr. Sciara:

The purpose of this letter is to provide written notification to the Florida Department of Environmental Protection (“**Department**”) that the proposed oil well site in the Kanter Real Estate, LLC (“**Kanter**”) Application for Permit to Drill No. 1366 has not been previously surveyed. As a result, an inordinate amount of preliminary surveying would have to be done to establish section corners or other standard reference points for purposes of submitting a location plat with this permit application. As requested and approved in writing, Kanter will submit an alternative location plat that satisfies Department rules and state laws governing surveys.

Item 4.2 of the Department’s Request for Additional Information in response to Kanter’s application states:

4.2. Department rule requires that the location plat also show the exact well location with reference to drilling unit boundaries, quarter-section corners, rivers and other prominent features; show ground elevation (with tolerances) at the drill site; state whether the proposed drilling unit is routine or nonroutine; and meet the minimum technical standards established in rule by the Board of Professional Surveyors and Mappers. Please revise the included Well Location Plat (Exhibit G) to address these requirements. [62C-26.003(7), F.A.C.]

Chapter 62C-26.003(7), F.A.C., regarding required elements of oil well drilling applications, states:

(7) Each application shall be accompanied by a location plat surveyed and prepared by a registered land surveyor licensed under Chapter 472, F.S. All such plats shall meet the minimum technical standards for land surveys as specified in Chapter 61G17-6, F.A.C., and must:

(a) Be drawn to a scale sufficient to show the required detail, preferably 1 inch = 1,000 feet.

(b) Show and provide a legal description of all mineral acreage within the drilling unit which is not under lease to the applicant.

(c) Show the exact well location (both surface and bottom if different) and unit acreage within the drilling unit and indicate distances to adjacent wells, drilling unit boundaries, quarter-section corners, rivers and other prominent features. **With prior notice and explanation to the Department, other established lines, reference points, or methods may be used when section corners are unavailable and an inordinate amount of preliminary surveying would have to be done to establish section corners or other standard reference points. In any case, a standard**

**survey or equivalent with plat shall be made prior to obtaining an operating permit.**

(d) Show ground elevation, with tolerances, at the drill site.

(e) State whether the proposed drilling unit is routine or nonroutine and specify the applicable subsection of Rule 62C-26.004, F.A.C., under which the well is located.

(emphasis added).

Kanter's representatives met with Department staff from the Oil and Gas program on September 1, 2015. At this meeting, Kanter's representatives explained that the proposed oil well site has not been previously surveyed. Department staff agreed that it would be acceptable, for purposes of the permit application, for Kanter to submit an alternative location plat that satisfies Florida law governing surveys and the Rules of the State Board of Professional Surveyors and Mappers. This plat will provide location information and indication of prominent features required by the Department in order to evaluate the permit application.

Kanter has prepared a plat using state plane coordinates, as provided in Section 177.151, Florida Statute. This section explains the methodology for producing a survey using state plane coordinates as follows:

177.151 State plane coordinate.—

(1) Coordinates may be used to define or designate the position of points on the surface of the earth within the state for land descriptions and subdivision purposes, provided the initial point in the description shall be tied to the nearest government corner or other recorded and well established corner. The state plane coordinates of a point on the earth's surface, to be used in expressing the position or location of such point in the appropriate projection and zone system, shall consist of two distances, expressed in meters or feet and decimals of the same. One position, to be known as the "Northing," shall give the position in a north and south direction; the other, to be known as the "Easting," shall give the position in an east and west direction. These coordinates shall be made to depend upon and conform to the origins and projections on the Florida State Plane Coordinate System and the geodetic control stations of the National Ocean Service within the state, as those origins and projections have been determined by such service. When any tract of land to be defined by a single description extends from one into the other of the above projections or zones, the positions of all points on its boundary may be referred to either of the zones or projections, with the zone and projection being used specifically named in the description.

(2) The position of points on the Florida State Plane Coordinate System shall be as marked on the ground by geodetic control stations established in conformity with standards adopted by the National Ocean Service for first-order and second-order work, the geodetic positions of which have been rigidly adjusted on the North American Datum of 1983, as readjusted in 1990, and the coordinates of which have been computed on the Florida State Plane Coordinate System. Any such station may be used for establishing a survey connection with the Florida State Plane Coordinate System.

§ 177.151, Florida Statutes (2015). The rules of the State Board of Professional Surveyors and Mappers apply to state plane coordinate surveys, as well.

Kanter understands that this survey is for purposes of the oil well permit only, and it will have to obtain a standard survey or equivalent plat should it decide to seek an operating permit in the future.

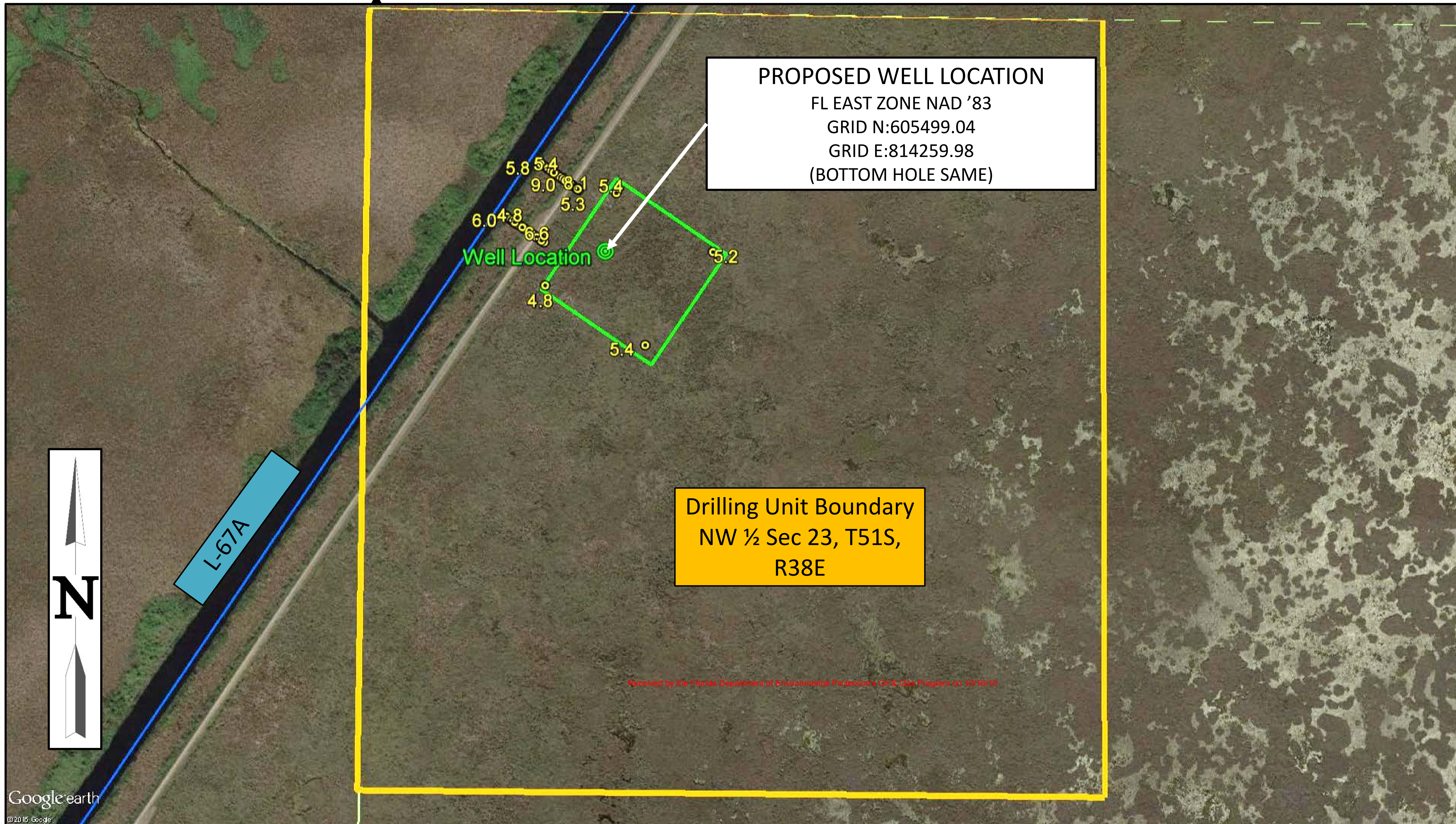
Please contact us if you have any questions about this notice or other aspects of Kanter's application.

Sincerely,

Carol Ann Howard  
President  
The Carol Group

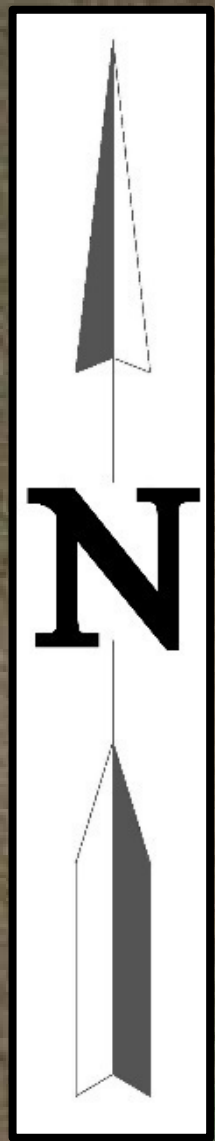
#### 4.3 Location plat showing correct bottom hole location

NW Corner Sec 23, T51S, R38E



**PROPOSED WELL LOCATION**  
 FL EAST ZONE NAD '83  
 GRID N:605499.04  
 GRID E:814259.98  
 (BOTTOM HOLE SAME)

**Drilling Unit Boundary**  
 NW 1/2 Sec 23, T51S,  
 R38E



Google earth  
 © 2015 Google

Received by the Florida Department of Environmental Protection's Oil & Gas Program on 10/18/15

**THE CAROL GROUP, INC**

*Professional Engineers and Surveyors*

**208 Dal Hall Boulevard  
 Lake Placid, FL 33852**

**Kanter 23-2  
 Drilling Unit  
 w Spot Elevations  
 Broward County, FL**

DATE:	
PROJECT NO.:	
FILE NO.:	
SCALE:	

SHEET NUMBER  
**4.3**

6(a) Construction plan set

# KANTER 23-2

BROWARD COUNTY, FLORIDA

SECTION 23, TOWNSHIP 51 S, RANGE 38 E,

JOSEPH R. BARBER  
FL REG # 75711  
I HAVE NO INTEREST IN THE PROPERTY  
I HAVE NO INTEREST IN THE PROPERTY  
BUSINESS OF RECORD



LOCATION MAP

## SHEET INDEX

## NUMBER

COVER SHEET	C-1.00
SITE INFORMATION & GENERAL NOTES	C-1.01
AERIAL / FLUCCS MAP	C-2.01
MASTER SITE / GRADING PLAN	C-2.02
TYPICAL SECTIONS	C-2.03-2.04
DETAILS	C-2.05-2.06
SWPPP	C-3.01



208 DAL HALL BOULEVARD, LAKE PLACID, FLORIDA 33852 (863) 659-1198

FL CA NO. 30023

## REVISIONS:

PROJECT NO.	SET DATE
KA2014.03	09/10/2015



GENERAL NOTES:

1. THE CONTRACTOR SHALL HAVE ALL REQUIRED PERMITS IN-HAND PRIOR TO BEGINNING CONSTRUCTION, AND SHALL PERFORM ALL WORK IN ACCORDANCE WITH THE REQUIREMENTS OF THE PERMITS OBTAINED BY THE CLIENT AND THOSE PERMITS OBTAINED BY THE CONTRACTOR.
2. AT LEAST THREE CALENDAR DAYS PRIOR TO THE PRECONSTRUCTION CONFERENCE; THE CONTRACTOR SHALL SUBMIT TO THE ENGINEER FOR APPROVAL A TENTATIVE BASE CONSTRUCTION SCHEDULE, TRAFFIC CONTROL PLAN, PRECONSTRUCTION SURVEY, AND SEDIMENT AND EROSION CONTROL PLAN. NO WORK SHALL BEGIN PRIOR TO APPROVAL OF THE CONSTRUCTION SCHEDULE, TRAFFIC CONTROL PLAN, PRECONSTRUCTION SURVEY, AND SEDIMENT AND EROSION CONTROL PLAN.
3. THE CONSTRUCTION SCHEDULE SHALL DESCRIBE IN DETAIL HOW THE CONSTRUCTION IS TO BE PHASED, ESTABLISH START AND FINISH DATES FOR ALL SIGNIFICANT CONSTRUCTION ACTIVITIES, AND IDENTIFY ALL CONTROLLING ITEMS OF WORK. THE SCHEDULE IS TO BE APPROVED BY THE ENGINEER, AND SHALL BE UPDATED ON A MONTHLY BASIS TO REFLECT ACTUAL WORK PROGRESS. THE UPDATED SCHEDULE SHALL BE SUBMITTED TO THE ENGINEER NO LATER THAN THREE DAYS PRIOR TO EACH SCHEDULED MONTHLY PROGRESS MEETING. PAYMENT FOR PREPARING, UPDATING AND SUBMITTING THE SCHEDULE SHALL BE INCLUDED IN THE PAY ITEM FOR MOBILIZATION.
4. THE PRECONSTRUCTION SURVEY SHALL VERIFY THE CONTROL POINTS AND BENCH MARK ELEVATIONS PROVIDED BY THE ENGINEER AND SHALL ALSO ESTABLISH THE LOCATION AND DESCRIPTION OF ALL ADDITIONAL REFERENCE POINTS AND THE LOCATIONS, DESCRIPTIONS, AND ELEVATIONS OF ALL ADDITIONAL BENCHMARKS TO BE USED IN CONSTRUCTING THE PROJECT. THE SURVEY SHALL BE SIGNED AND SEALED BY A PROFESSIONAL SURVEYOR AND MAPPER REGISTERED IN THE STATE OF FLORIDA. SIGNIFICANT INCONSISTENCIES BETWEEN THE FIELD NOTES AND THE CONTROL POINTS AND BENCH MARK ELEVATIONS PROVIDED BY THE ENGINEER SHALL IMMEDIATELY BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR RESOLUTION PRIOR TO ISSUANCE OF THE NOTICE TO PROCEED. PAYMENT SHALL BE INCLUDED IN THE PAY ITEM FOR MOBILIZATION.
5. THE GEOTECHNICAL INFORMATION SHOWN ON THE DRAWINGS WAS OBTAINED FOR USE IN ESTABLISHING DESIGN CRITERIA FOR THE PROJECT. THIS INFORMATION MAY NOT ACCURATELY REFLECT ACTUAL SOIL CONDITIONS AS TO THE DEPTH, EXTENT OR CHARACTER OF THE MATERIAL TO BE ENCOUNTERED IN CONSTRUCTION OF THE PROJECT. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO MAKE SUCH EXAMINATION OF THE SITE OF THE WORK AS MAY BE NECESSARY TO DETERMINE THE CONDITIONS UNDER WHICH THE WORK IS TO BE PERFORMED.
6. THE CONTRACTOR IS RESPONSIBLE FOR PRESERVING ALL PROPERTY CORNERS AND MONUMENTS SHOWN ON THE DRAWINGS OR FOUND DURING CONSTRUCTION. IF A PROPERTY CORNER OR MONUMENT IS DESTROYED OR DISTURBED, THE CONTRACTOR WILL HAVE IT REPLACED AND CERTIFIED BY A PROFESSIONAL SURVEYOR AND MAPPER REGISTERED IN THE STATE OF FLORIDA. ALL COSTS FOR PRESERVING, REPLACING AND CERTIFYING PROPERTY CORNERS AND MONUMENTS WILL BE INCLUDED IN THE PAY ITEM FOR MOBILIZATION.
7. ANY NATIONAL GEODETIC SURVEY MONUMENT WITHIN THE LIMITS OF CONSTRUCTION MUST BE PROTECTED. IF IN DANGER OF DAMAGE, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND:
 

FDEP, BUREAU OF SURVEY AND MAPPING, MS 100  
3900 COMMONWEALTH BLVD.  
TALLAHASSEE, FLORIDA 32399  
(850) 245-2555 (OFFICE)  
(850) 245-2572 (FAX)
8. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES. THE INFORMATION SHOWN ON THESE DRAWINGS CONCERNING TYPE AND LOCATION OF UNDERGROUND AND OTHER UTILITIES IS BASED ON INFORMATION PROVIDED BY THE UTILITY OWNERS, AVAILABLE RECORDS, AND SURVEYED FIELD INFORMATION. THE INFORMATION MAY NOT REFLECT ACTUAL CONDITIONS, INCLUDE ALL UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED, OR SHOW THE UTILITIES IN THE CORRECT HORIZONTAL OR VERTICAL LOCATIONS. THE CONTRACTOR SHALL MAKE HIS OWN DETERMINATION AS TO THE TYPE AND LOCATION OF UTILITIES AS NECESSARY TO ESTABLISH THEIR LOCATIONS AND AVOID DAMAGE. THE FOLLOWING UTILITIES SHOULD BE CONTACTED FOR INFORMATION CONCERNING TYPE AND LOCATION OF THEIR FACILITIES. THE LIST MAY NOT INCLUDE ALL UTILITIES IN THE AREA.
 

SUNSHINE STATE ONE-CALL OF FLORIDA                      811 OR 800-432-4770 (5 DAYS NOTIFICATION PRIOR TO CONSTRUCTION)
9. ALL UTILITIES IN CONFLICT WITH CONSTRUCTION ARE TO BE ADJUSTED OR RELOCATED BY OTHERS UNLESS NOTED OTHERWISE ON THE DRAWINGS OR DIRECTED BY THE ENGINEER.
10. LIMITS OF CONSTRUCTION ARE DEFINED IN THE PLANS AND CONSIST OF ROADWAY RIGHTS-OF-WAY, CLIENT PROPERTIES, DRAINAGE RIGHTS-OF-WAY, PERMANENT DRAINAGE AND/OR UTILITY EASEMENTS, AND TEMPORARY CONSTRUCTION EASEMENTS.
11. THE CONTRACTOR SHALL PUT FORTH EVERY REASONABLE EFFORT TO MINIMIZE DISRUPTION AND DISTURBANCE OF ADJACENT PROPERTIES.
12. THE CONTRACTOR IS RESPONSIBLE FOR THE PROTECTION OF ALL TREES AND LANDSCAPING ON ADJACENT PROPERTIES, AND WILL BE SOLELY LIABLE FOR DAMAGE TO VEGETATION ON PROPERTIES ADJACENT TO CONSTRUCTION WORK ZONES. ALL TREES WITHIN THE LIMITS OF CONSTRUCTION THAT ARE NOT IDENTIFIED ON THE PLANS TO BE REMOVED SHALL BE PROTECTED TO THE MAXIMUM EXTENT PRACTICABLE. TREE PROTECTION BARRICADES SHALL BE INSTALLED AND MAINTAINED AROUND ALL TREES THAT ARE TO BE PROTECTED AS SHOWN ON THE DRAWINGS OR AS DIRECTED BY THE ENGINEER.
13. THE CONTRACTOR SHALL NOT DISTURB GRASSING OR LANDSCAPING OUTSIDE CONSTRUCTION WORK ZONES. THE CONTRACTOR SHALL BE SOLELY LIABLE FOR DAMAGE TO VEGETATION OUTSIDE CONSTRUCTION WORK ZONES AND SHALL RESTORE AT NO COST TO THE CLIENT ANY AREAS THAT ARE DAMAGED INCLUDING AREAS WITHIN THE LIMITS OF CONSTRUCTION OR ON ADJACENT PROPERTIES USING, TO THE EXTENT PRACTICABLE, THE SAME TYPES AND SIZES OF PLANT MATERIAL THAT EXISTED PRIOR TO CONSTRUCTION.
14. DISTURBED AREAS SHALL BE COMPACTED (AT A MINIMUM) EQUAL TO ADJACENT UNDISTURBED GROUND EXCEPT WHEN OTHERWISE SPECIFIED.
15. ALL DISTURBED AREAS WITHIN CONSTRUCTION WORK ZONES ARE TO BE GRASSED EXCEPT FOR AREAS THAT ARE BELOW NORMAL WATER LEVEL. EXISTING GRASSED AREAS SHALL BE REPLANTED WITH SOD OF THE SAME GRASS TYPE AS EXISTING, UNLESS OTHERWISE SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER. SOD WILL BE USED FOR DISTURBED AREAS NOT CURRENTLY GRASSED. REINFORCEMENT MAT SHALL BE INSTALLED BENEATH SOD PLACED ON SLOPES OF 2H:1V OR STEEPER, AND THE SOD SHALL BE STAPLED. COSTS FOR REINFORCEMENT MAT, STAPLING, FERTILIZING, AND WATERING SHALL BE INCLUDED IN THE UNIT PRICE OF THE PAY ITEM FOR PERFORMANCE TURF.
16. PRIOR TO REQUESTING A FINAL INSPECTION, THE CONTRACTOR SHALL PREPARE AND SUBMIT TO THE ENGINEER FOUR COMPLETE SETS OF CERTIFIED AS-BUILT RECORD DRAWINGS AND TWO COPIES OF THE DIGITAL FILES ON CD-ROM DISKS.
17. EXCAVATED MATERIAL SHALL NOT BE DEPOSITED IN LOCATIONS WHERE IT COULD BE WASHED AWAY BY HIGH WATER OR BY STORMWATER RUNOFF, AND STOCKPILES SHALL BE COVERED OR ENCIRCLED WITH SEDIMENT CONTAINMENT DEVICES.
18. STABILIZATION MEASURES SHALL BE INITIATED FOR EROSION AND SEDIMENT CONTROL ON DISTURBED AREAS AS SOON AS PRACTICABLE, BUT IN NO CASE MORE THAN 14 DAYS AFTER CONSTRUCTION ACTIVITY IN THOSE PORTIONS OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.
19. PERMANENT SOIL EROSION CONTROL MEASURES FOR ALL DISTURBED LAND AREAS SHALL BE COMPLETED IMMEDIATELY AFTER FINAL GRADING. WHEN IT IS NOT POSSIBLE TO PERMANENTLY PROTECT A DISTURBED AREA IMMEDIATELY AFTER GRADING OPERATIONS, TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED. ALL TEMPORARY EROSION CONTROL DEVICES SHALL BE MAINTAINED UNTIL PERMANENT MEASURES ARE IN PLACE AND ESTABLISHED.

SUPPLEMENTAL GENERAL NOTES:

1. ELEVATIONS ARE BASED ON NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88). TOPOLOGY WAS PREPARED BY THE ENGINEER AND IS NOT CONSIDERED PART OF THE SURVEY AND IS ONLY FOR INFORMATIONAL PURPOSES.
2. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE PREVENTION, CONTROL, AND ABATEMENT OF EROSION, WATER POLLUTION, AND THE TRANSPORTATION OF ERODED MATERIALS OFF SITE.
3. THE CONTRACTOR SHALL PREPARE A SEDIMENT AND EROSION CONTROL PLAN TO ACCOMPANY THE STORMWATER POLLUTION PREVENTION PLAN AND THE SEDIMENT AND EROSION CONTROL PLAN INCLUDED IN THESE PLANS. THE SEDIMENT AND EROSION CONTROL PLAN SHALL BE PREPARED IN ACCORDANCE WITH THE "FLORIDA EROSION AND SEDIMENT CONTROL MANUAL" AND SHALL BE SPECIFIC TO THE MEANS, METHODS, AND SEQUENCE OF CONSTRUCTION TO BE EMPLOYED BY THE CONTRACTOR AND SHALL IDENTIFY THE TYPES AND LOCATIONS OF CONTROLS THAT ARE TO BE IMPLEMENTED DURING EACH PHASE OF CONSTRUCTION AS SHOWN ON THE APPROVED CONSTRUCTION SCHEDULE TO MINIMIZE EROSION, PREVENT THE TRANSFER OF ERODED MATERIALS ONTO ANY OFF SITE PARCEL OR INTO ANY RECEIVING WATER, AND PREVENT VIOLATING STATE AND/OR FEDERAL PERMIT REQUIREMENTS. PAYMENT FOR PREPARING AND SUBMITTING THE SEDIMENT AND EROSION CONTROL PLAN AND FOR ANY MODIFICATIONS TO THE SEDIMENT AND EROSION CONTROL PLAN DURING CONSTRUCTION WILL BE INCLUDED IN THE PAY ITEM FOR MOBILIZATION. THE SEDIMENT AND EROSION CONTROL PLAN SHALL DESCRIBE BUT NOT BE LIMITED TO THE FOLLOWING ITEMS FOR EACH PHASE OF CONSTRUCTION OPERATIONS OR ACTIVITIES:
  - A. TYPES AND LOCATIONS OF ALL EROSION CONTROL DEVICES
  - B. ESTIMATED TIME EROSION CONTROL DEVICES WILL BE IN OPERATION
  - C. SCHEDULES FOR MONITORING AND MAINTENANCE OF EROSION CONTROL DEVICES
  - D. METHODS OF MAINTAINING EROSION CONTROL DEVICES
  - E. METHODS FOR CONTAINMENT OR REMOVAL OF POLLUTANTS OR HAZARDOUS WASTES
  - F. NAME AND PHONE NUMBERS OF PERSON RESPONSIBLE FOR MONITORING AND MAINTAINING EROSION CONTROL DEVICES
4. NO CONSTRUCTION ACTIVITIES SHALL BEGIN UNTIL THE SEDIMENT AND EROSION CONTROL PLAN HAS RECEIVED WRITTEN APPROVAL FROM THE ENGINEER.
5. THE CONTRACTOR SHALL UPDATE THE SEDIMENT AND EROSION CONTROL PLAN AND/OR THE DEWATERING PLAN WHENEVER THERE IS A CHANGE IN CONSTRUCTION SEQUENCE OR ACTIVITIES THAT HAS A SIGNIFICANT EFFECT ON THE POTENTIAL FOR THE DISCHARGE OF POLLUTANTS OFF SITE OR INTO ANY RECEIVING WATER AND SHALL SUBMIT THE UPDATED PLAN FOR REVIEW AND APPROVAL BY THE ENGINEER.
6. EROSION AND SEDIMENT CONTROLS SHALL BE PLACED PRIOR TO OR AS THE FIRST STEP IN CONSTRUCTION AND SHALL BE IN PLACE BEFORE DISTURBING SOIL UPSTREAM OF THE CONTROL.
7. FIELD CONDITIONS MAY REQUIRE THE USE OF ADDITIONAL TYPES AND QUANTITIES OF SEDIMENT AND EROSION CONTROL DEVICES DURING CONSTRUCTION AS DETERMINED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.
8. THE CONTRACTOR SHALL INSPECT ALL SEDIMENT AND EROSION CONTROL DEVICES PRIOR TO SUSPENSION OF WORK ACTIVITIES EACH DAY, IMMEDIATELY AFTER EACH RAINFALL, AND AT LEAST DAILY DURING PROLONGED RAINFALL TO ENSURE THAT THE DEVICES ARE PROPERLY LOCATED AND MAINTAINED FOR EFFECTIVENESS. ANY REQUIRED REMEDIAL ACTION SHALL BE PERFORMED IMMEDIATELY.
9. SEDIMENT TRAPPED BY THE EROSION CONTROL DEVICES IS TO BE REMOVED BY THE CONTRACTOR AFTER EACH RAIN STORM.
10. THE AMOUNT OF AREA DISTURBED AT ONE TIME SHALL BE LIMITED TO THE MINIMUM NECESSARY TO ADEQUATELY IMPLEMENT THE WORK. CONSTRUCTION OPERATIONS SHALL BE CONTROLLED TO MINIMIZE UNPROTECTED AREAS EXPOSED TO WEATHER, AND AREAS OUTSIDE THE LIMITS OF CONSTRUCTION SHALL NOT BE DISTURBED.
11. EXCAVATED MATERIAL SHALL NOT BE DEPOSITED IN LOCATIONS WHERE IT COULD BE WASHED AWAY BY HIGH WATER OR BY STORMWATER RUNOFF, AND STOCKPILES SHALL BE COVERED OR ENCIRCLED WITH SEDIMENT CONTAINMENT DEVICES.
12. STABILIZATION MEASURES SHALL BE INITIATED FOR EROSION AND SEDIMENT CONTROL ON DISTURBED AREAS AS SOON AS PRACTICABLE, BUT IN NO CASE MORE THAN 14 DAYS AFTER CONSTRUCTION ACTIVITY IN THOSE PORTIONS OF THE SITE HAS TEMPORARILY OR PERMANENTLY CEASED.
13. PERMANENT SOIL EROSION CONTROL MEASURES FOR ALL DISTURBED LAND AREAS SHALL BE COMPLETED IMMEDIATELY AFTER FINAL GRADING. WHEN IT IS NOT POSSIBLE TO PERMANENTLY PROTECT A DISTURBED AREA IMMEDIATELY AFTER GRADING OPERATIONS, TEMPORARY EROSION CONTROL MEASURES SHALL BE INSTALLED. ALL TEMPORARY EROSION CONTROL DEVICES SHALL BE MAINTAINED UNTIL PERMANENT MEASURES ARE IN PLACE AND ESTABLISHED.

SITE DATA SUMMARY

OWNER/APPLICANT:  
NAME  
STREET ADDRESS  
CITY, STATE ZIP CODE

SECTION: 23 TOWNSHIP: 51S RANGE: 38E

PAD BOUNDARY AREA = 217,799 SF = 5.00 AC  
SPOIL AREA = 40,000 SF = 0.92 AC  
STORMWATER MGMT BASIN = 252,835 SF = 5.03 AC  
WETLAND IMPACTS = 297,247 SF = 6.82 AC

5 AC SITE DEVELOPMENT AREA DATA:

BUILDING AREA = 0 SF = 0 AC =0 %  
PVT. / CONC. = 0 SF = 0 AC =0 %  
IMPERVIOUS AREA = 10,400 SF = 0.24 AC =5 %  
PERVIOUS AREA = 207,400 SF = 4.76 AC =95 %

**THE CAROL GROUP, INC**

*Professional Engineers and Surveyors*

208 Dal Hall Boulevard Lake Placid, FL 33852

GENERAL NOTES

KANTER 23-2

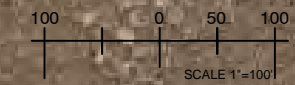
Broward County, Florida

TCG PROJECT: KA2014.03

CHECKED BY: WRH    DESIGNED BY: JRB

DATE: 09-10-2015

SHEET C-1.01



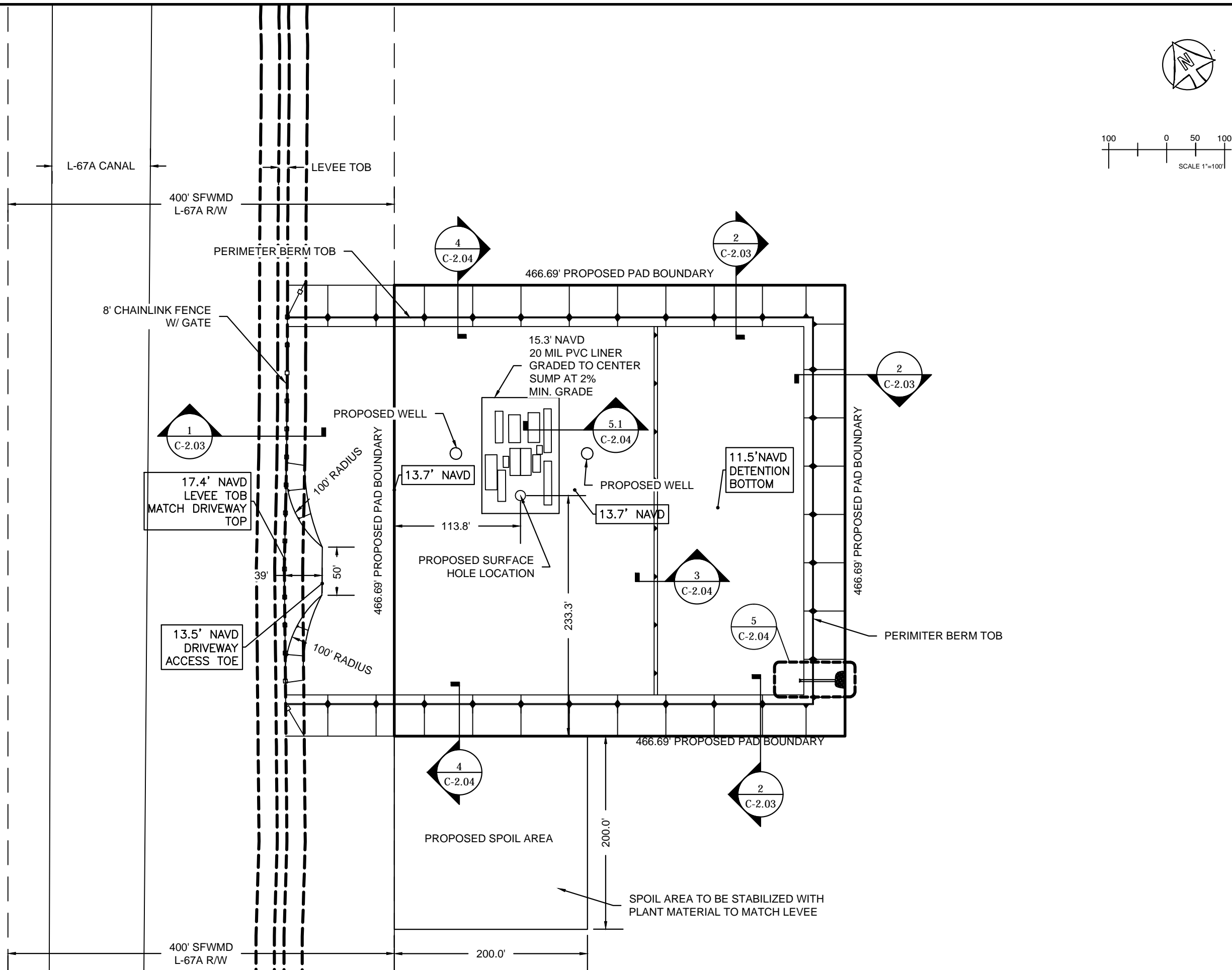
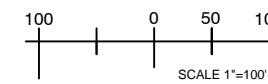
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 F.L.P.E.# 73111  
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REVISIONS

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AERIAL / FLUCCS MAP  
 KANTER 23-2  
 Broward County, Florida

TCG PROJECT:  
 KA2014.03  
 CHECKED BY: WRH    DESIGNED BY: JRB  
 DATE:  
 09-10-2015  
 SHEET  
**C-2.01**

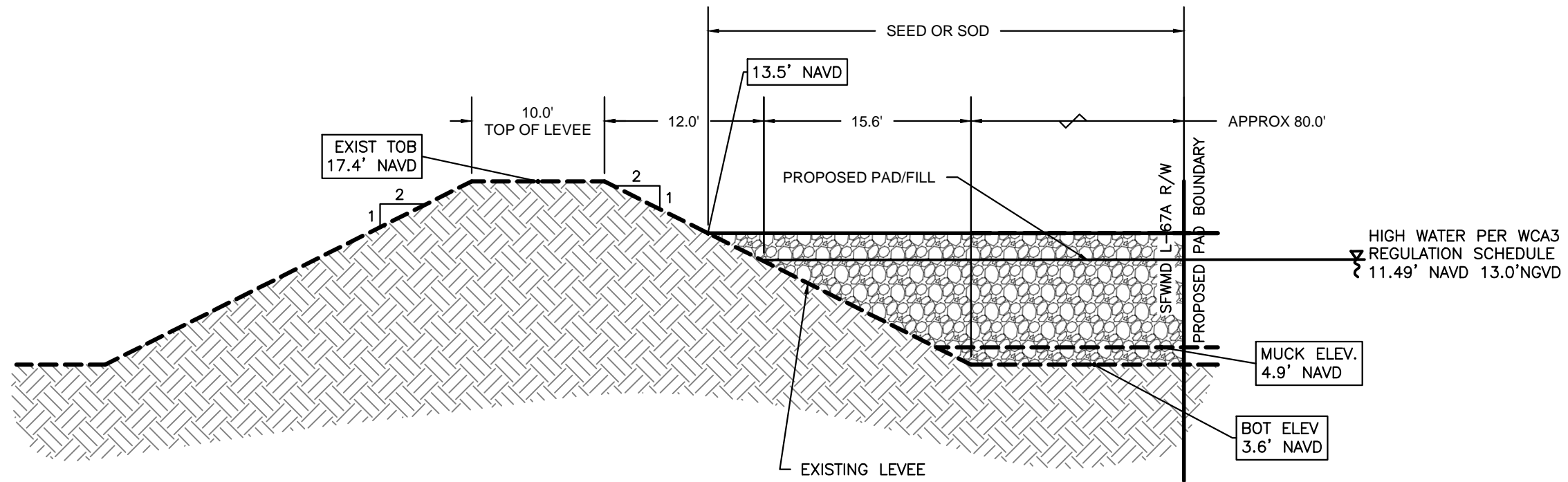


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FL.P.E.# 73111  
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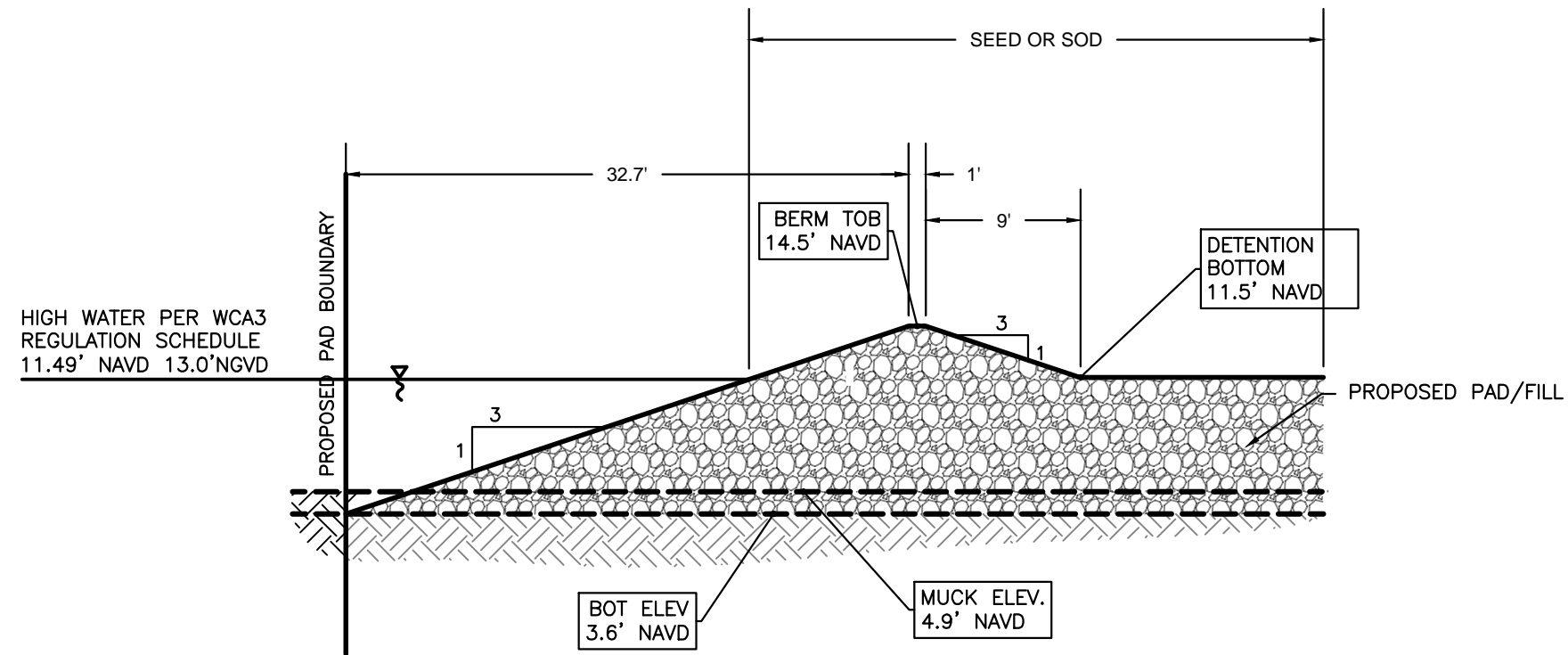
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MASTER SITE/GRADING PLAN	
KANTER 23-2	
Broward County, Florida	
TCG PROJECT: KA2014.03	CHECKED BY: WRH
DESIGNED BY: JRB	DATE: 09-10-2015
SHEET C-2.02	



1 TYPICAL SECTION AT LEVEE SFWMD L-67A R/W

Scale: 1:10



2 TYPICAL SECTION AT PAD BOUNDARY

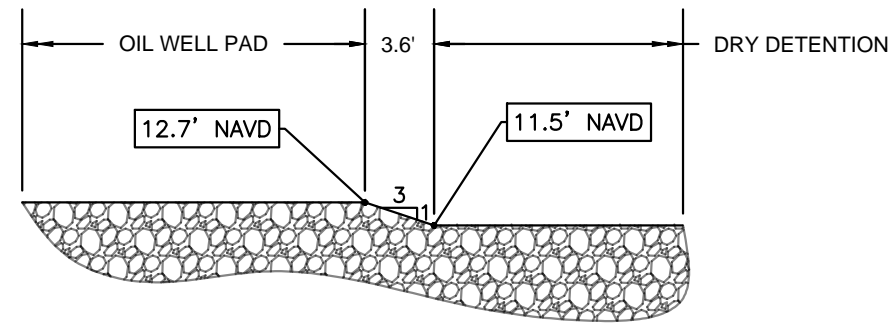
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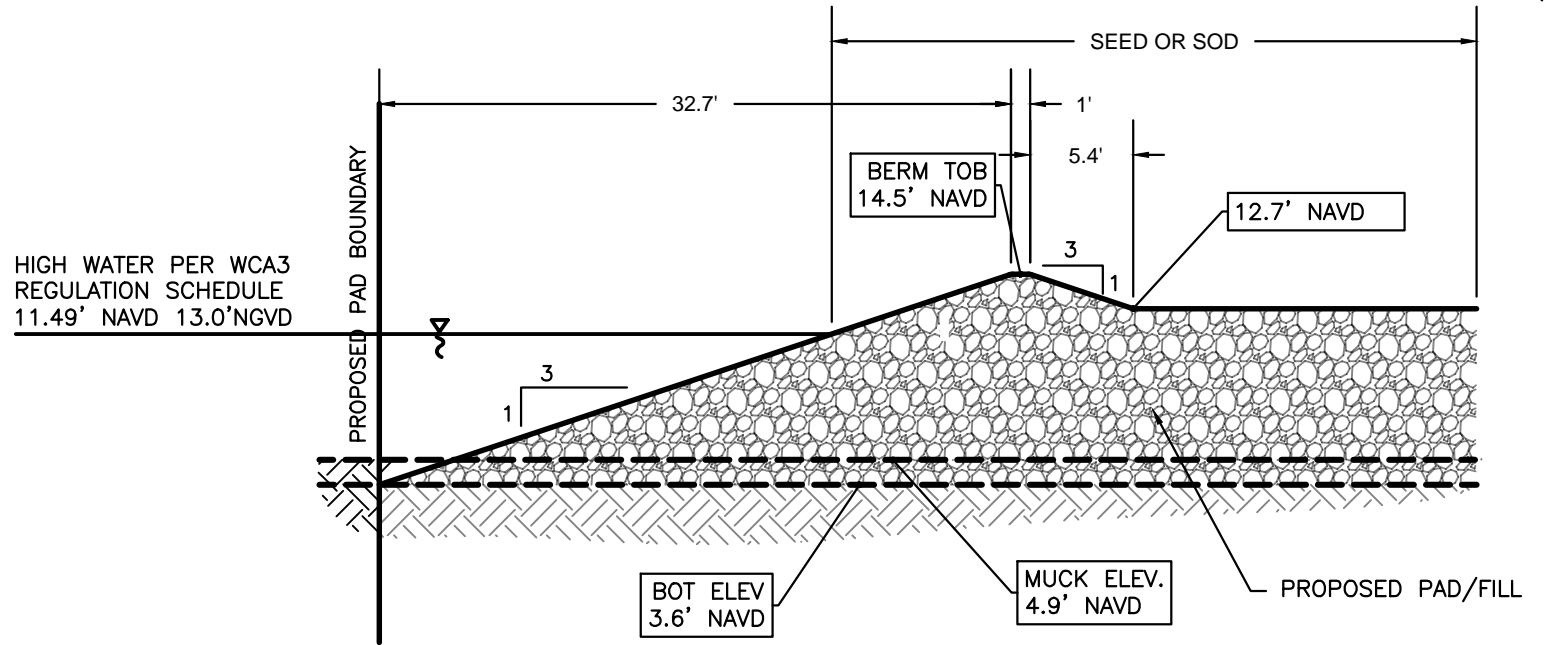
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TYPICAL SECTIONS  
KANTER 23-2  
Broward County, Florida

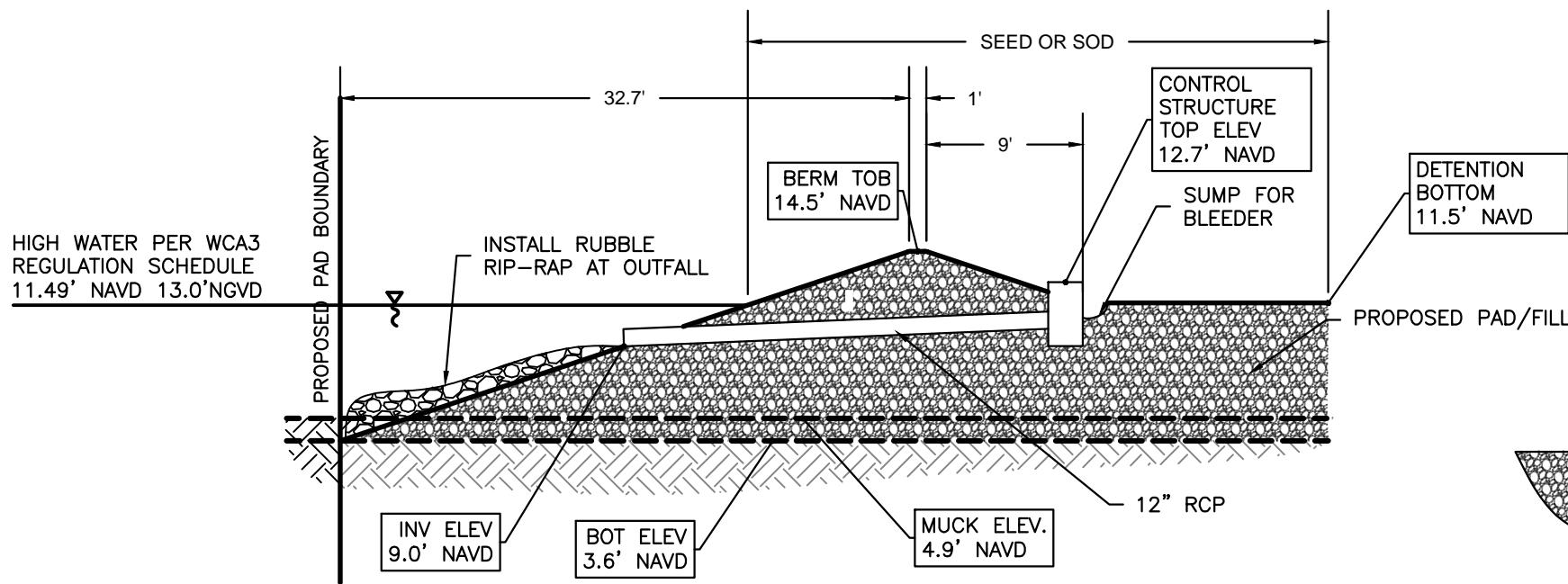
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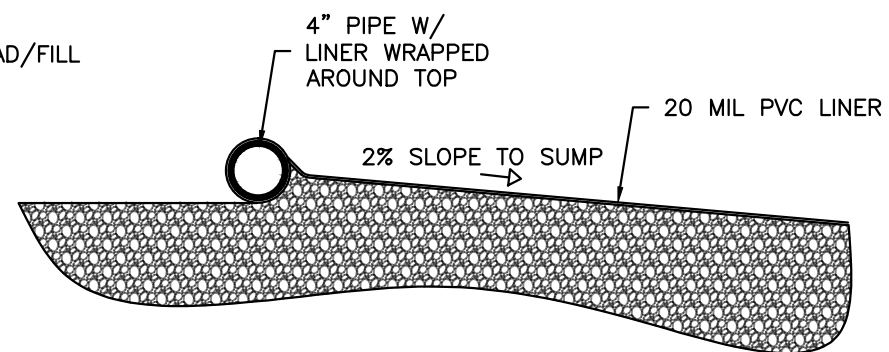
3 DETENTION TYPICAL SECTION  
Scale: 1:10



4 TYPICAL SECTION AT PAD BOUNDARY  
Scale: 1:10



5 TYPICAL SECTION AT CONTROL STRUCTURE  
Scale: 1:10



5.1 TYPICAL SECTION AT LINER  
N.T.S.

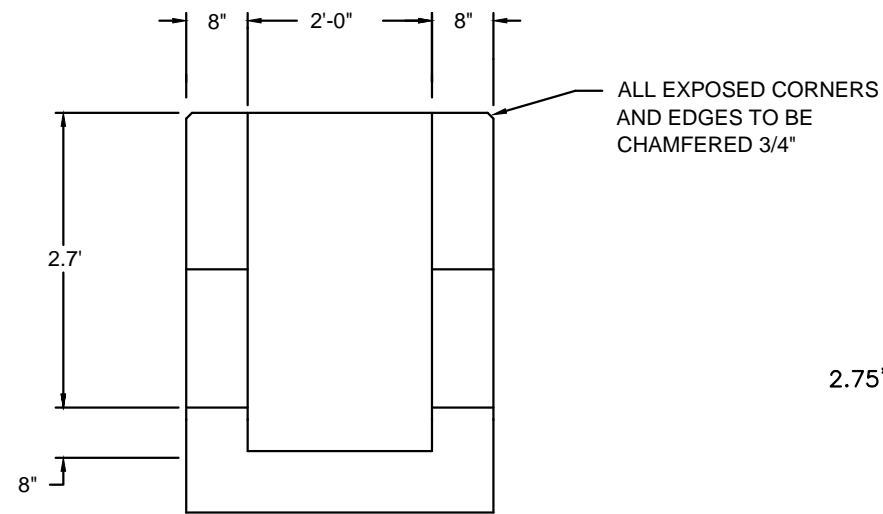
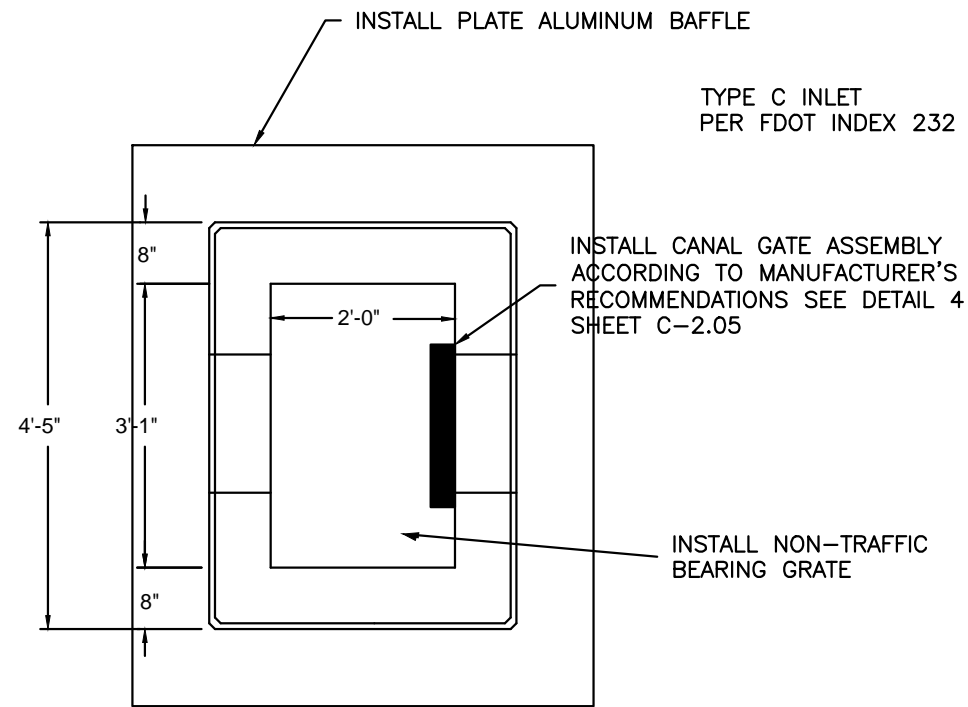
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REVISIONS

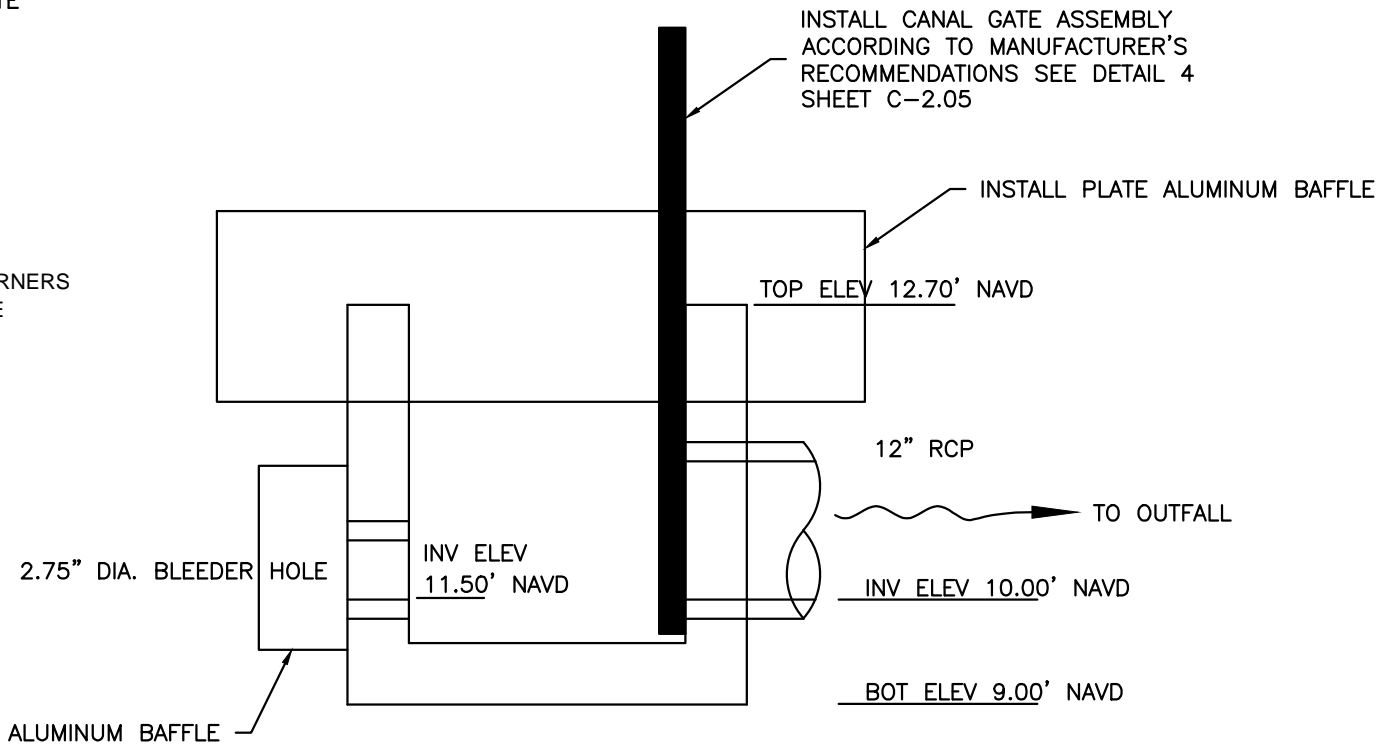
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TYPICAL SECTIONS  
KANTER 23-2  
Broward County, Florida

TCG PROJECT: KA2014.03	DATE: 09-10-2015
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SHEET <b>C-2.04</b>	



PIPE MUST NOT BE IN CONSTRUCTION JOINT  
PIPES SHALL BE FLUSH WITH INSIDE WALL



6 CONTROL STRUCTURE W/ CANAL GATE INSTALLATION

N.T.S.

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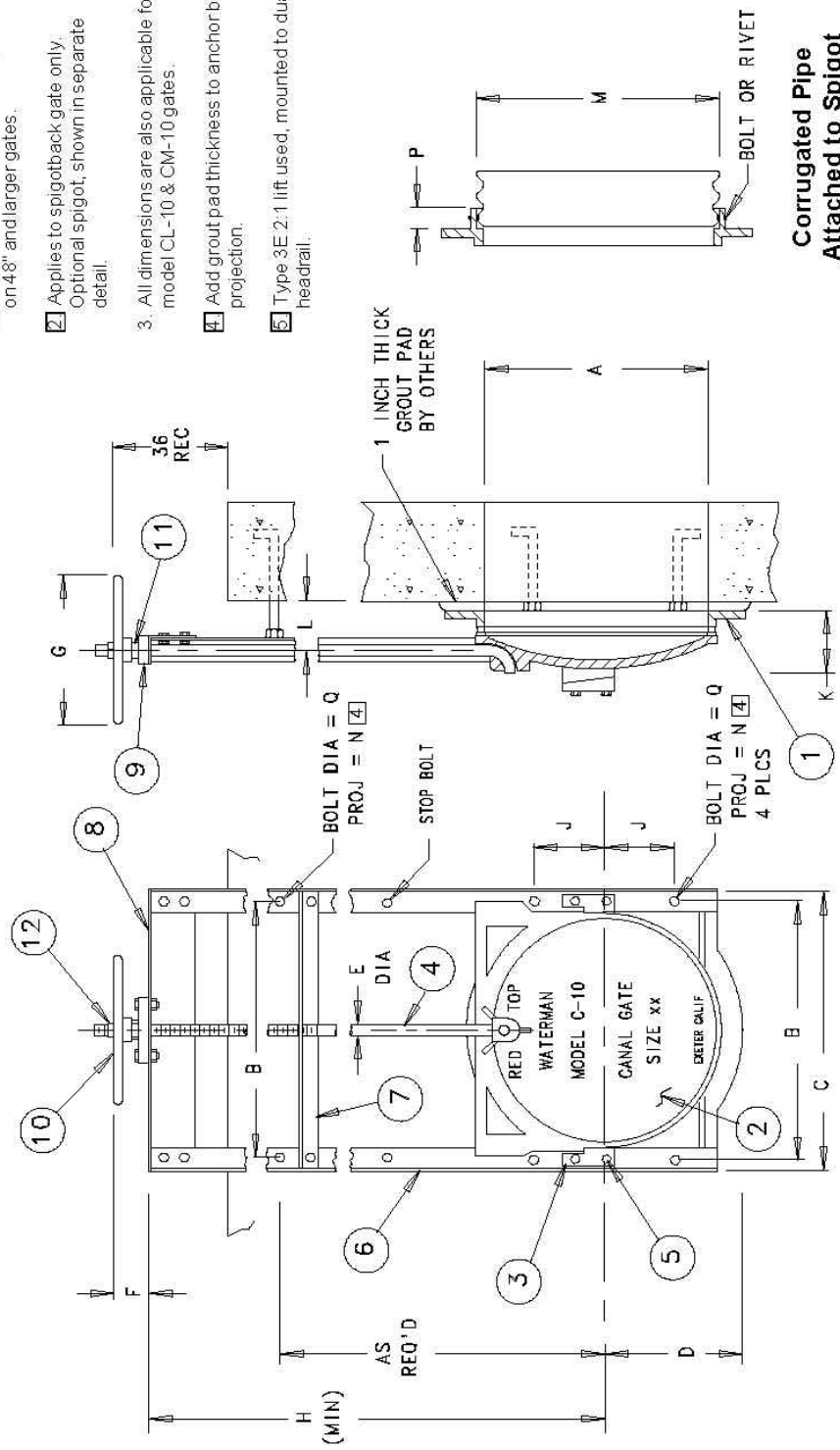
DRAINAGE STRUCTURE DETAIL  
KANTER 23-2  
Broward County, Florida

TCG PROJECT: KA2014.03  
CHECKED BY: WRH DESIGNED BY: JRB  
DATE: 09-10-2015  
SHEET C-2.05

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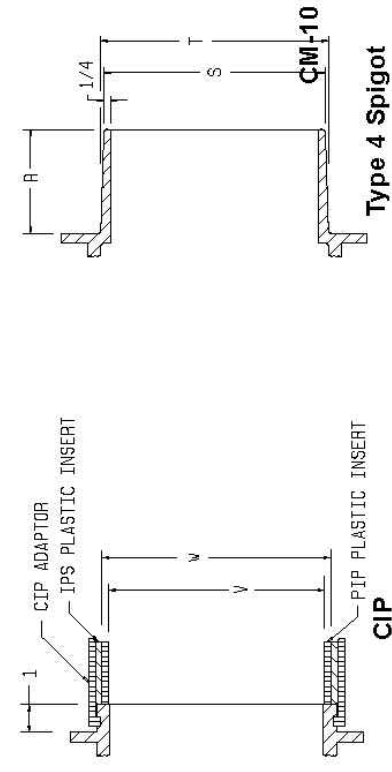
# CANAL GATES

## C-10 CANAL GATE



- NOTES**
- TYPE 2 lubricated ball bearing lift used on 48" and larger gates.
  - Applies to spigotback gate only. Optional spigot, shown in separate detail.
  - All dimensions are also applicable for model CL-10 & CM-10 gates.
  - Add grout pad thickness to anchor bolt projection.
  - Type 3E 2:1 lift used, mounted to dual headrail.

**Corrugated Pipe Attached to Spigot Back Frame**



PARTS LIST		
No.	Name	Qty.
1	Frame	1
2	Cover	1
3	Wedge (Right & Left)	1 ea.
4	Stern	1
5	Wedge Bolts	4
6	Guide Rail	2
7	Stern Support	A/R
8	Head Rail	1
9	Lift Collar	1
10	Handwheel	1
11	Lift Nut	1
12	Limit Nut	1

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	V	W
6	8	9 7/8	4	7 1/2	2 7/8	10	24	3	3 1/2	2 5/8	7	3 1/2	2 1/4	1 1/2	-	-	-	6.160	6.645
8	10	12	4 7/8	7 1/2	2 7/8	10	24	3	3 3/4	2 1/2	9	3 1/2	2 1/4	1 1/2	4	7 1/8	8	8.180	8.645
10	12	14 1/2	6	7 1/2	2 7/8	10	24	3 1/2	3 3/4	2 1/2	11	3 1/2	2 1/4	1 1/2	3 3/4	3 3/4	10	10.290	10.770
12	14	15 7/8	7	7 1/2	2 7/8	10	24	4	3 1/2	3	13	4	2 3/4	1 1/2	4	1 1/8	12	12.270	12.780
14	16	17 7/8	8	7 1/2	2 7/8	10	27	4 1/2	3 3/4	3 1/4	15	4	3 1/4	1 1/2	4 1/2	1 1/8	14	14.340	14.850
15	17	18 7/8	8 1/2	7 1/2	2 7/8	10	30	5	4 1/2	3 1/2	16	4	2 1/2	1 1/2	4 1/2	1 1/8	15	-	-
16	18 1/4	20 1/8	9 1/8	7 1/2	2 7/8	10	32	5 1/2	4 1/2	3 1/2	17	4 1/2	2 3/4	1 1/2	5	-	-	-	-
18	21	22 7/8	10 1/2	1	3 1/8	12	34	6	4 1/2	4 1/4	19	4 1/2	2 1/4	1 1/2	5 1/2	4	17 1/8	18	-
20	23 3/4	25 1/8	11 3/4	1	3 1/8	12	38	7	4 3/4	4	21	4 1/2	2 1/4	1 1/2	6	-	-	-	-
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30	33 3/4	36 1/8	17 1/8	1 1/2	4	15	54	10	6	4 1/2	31	6	2 1/4	1 1/2	9 1/2	-	-	-	-
36	39 3/4	42 1/8	20 1/2	1 1/2	4	15	62	12	6 1/4	5 3/8	37	6	2 1/4	1 1/2	10 1/2	-	-	-	-
42	45 3/4	48 3/8	23 3/8	1 1/2	5	18	84	14	7	6	43	6	2 1/4	1 1/2	12 1/2	-	-	-	-
48	51 3/4	54 3/8	26 3/4	1 1/2	6	24	90	16	7 3/8	6 1/8	49 1/2	6	2 1/4	1 1/2	14 1/2	-	-	-	-
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72	77 1/2	80 1/4	41	2	13	5	121	25 1/2	10 3/8	8 3/4	73 1/4	8	3 3/4	1	20 1/2	-	-	-	-

GATE DIMENSIONS IN INCHES



16C

7

### CANAL GATE SPECIFICATION

N.T.S.

CANAL GATE DETAIL

KANTER 23-2

Broward County, Florida

**THE CAROL GROUP, INC**

Professional Engineers and Surveyors

208 Dal Hall Boulevard Lake Placid, FL 33852

REVISIONS

JOSEPH B. BARBER  
E.L.P.E.# 73111  
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DATE: 09-10-2015
SHEET C-2.06



TEMPORARY STAGING AREA  
EXISTING LEVEE TURNAROUND

FLOATING TURBITIDY BARRIER  
OR SILT FENCE

FLOATING TURBITIDY BARRIER  
OR SILT FENCE

FLOATING TURBITIDY BARRIER  
OR SILT FENCE

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*Professional Engineers and Surveyors*

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STORMWATER POLLUTION PREVENTION PLAN

KANTER 23-2

Broward County, Florida

TCG PROJECT:  
KA2014.03

CHECKED BY: MWM DESIGNED BY: JRB

DATE:  
09-10-2015

SHEET  
C-3.01



6(b) Spill prevention and clean-up plan

# **Century Oil Co., Inc.**



**Kanter Real Estate, LLC**

Kanter 23-2

Broward County, FL, US

## **SPILL PREVENTION AND CLEAN-UP PLAN**

Prepared By:

Ed Pollister

P.O. Box 765

Chokoloskee, FL 34138

239-695-2276

# Spill Prevention & Clean-Up Plan for Kanter 23-2

## Section A: General Information

### 1. Name and Location of Facility

<b>Name</b>	Kanter 23-2
<b>Location</b>	Latitude 25°57'53.615" North and Longitude 80°32'42.193" West in Section 23, Township 51 South, Range 38 East, Broward County, Florida

### 2. Facility Operator

<b>Name</b>	Century Oil Co., Inc.
<b>Address</b>	305 Kumquat Street/PO Box 370 Everglades City, FL 34139
<b>Telephone</b>	(231) 631-4721

### 3. Persons Accountable for Spill Prevention

<b>Name</b>	Ed Pollister
<b>24-Hour Telephone</b>	(231) 631-4721

### 4. Potential Spills – Prediction and Control

Source	Major Type of Failure	Total Quantity (bbls)	Rate (bbls/hr)	Direction of Flow	Secondary Containment
<b>Storage Area</b>	Tank rupture	400 (1)	400	Contained on-site	Internal
<b>Process Area</b>	Rupture or break	60 (2)	2.5	Contained on-site	Perimeter berm
<b>Wellhead</b>	Break	60(3)	2.5	Contained on-site	Perimeter berm
<b>Truck Loading</b>	Truck overflow or line disconnect	220 (4)	220	Contained on-site	Perimeter berm

#### Notes:

1. Storage Area based on catastrophic failure of largest storage tank at facility, if the tank was completely full.
2. Process Area based on the largest possible throughput during a maximum of 24 hours of unattended operations.
3. Wellhead based on current oil flow rate during a maximum of 24 hours of unattended operations.
4. Truck Loading based on truck transport capacity.
5. L 67-A Canal is the nearest potential receiving water body, located 237 feet from the well location.

## **5. Containment and Diversionary Structures**

Containment or diversionary structures or equipment to prevent oil from reaching navigable waters are as follows:

- Storage tanks are equipped with firewall/berm (primary).
- The process area and wellhead are equipped with a perimeter containment berm that surrounds the location area.

## **6. Inspections and Reports**

The required inspections follow written procedures. The written procedures and a record of inspections, signed by the appropriate supervisor or inspector, are maintained with this plan for a minimum of 3 years.

## **7. Personnel Training and Spill Prevention Procedures**

a) Personnel are properly instructed in the following:

- Operation and maintenance of equipment to prevent oil discharges
- Applicable pollution control laws, rules, and regulations

b) Methods and procedures employed to accomplish instruction:

- Qualified and experienced personnel will conduct on-the-job training of new or inexperienced employees.
- All employees are made aware of pollution prevention and applicable regulatory requirements.
- Appropriate personnel are furnished copies of rules and regulations, and a program is established to maintain field familiarity and compliance with regulatory requirements.
- Scheduled prevention briefings for the operating personnel are conducted periodically to assure adequate understanding of the Spill Prevention & Cleanup Plan. Records of these briefings are maintained with this plan for a minimum of 3 years.

## **Section B: Design and Operating Information**

### **1. Facility Drainage**

a) Drainage from the berm (primary) is controlled as follows: Drainage is controlled by manual valves, which are locked in the nondrain position.

b) The procedure for monitoring the drainage of rain water from the berm (primary) into the perimeter berm containment area is detailed in Section E. No drainage of the perimeter berm area is permitted under normal operating conditions.

c) All bermed areas are inspected at regularly scheduled intervals for accumulations of oil. All oil is to be removed prior to any drainage activity.

## **2. Bulk Storage Tanks**

a) Tank design, materials of construction, and fail-safe engineering features:

Tank material and construction is compatible with material stored and conditions of storage such as pressure, temperature, etc. Tanks are engineered as far as practicable with consideration for the following failsafe devices:

- Adequate tank capacity to prevent overflow
- Overflow equalizing lines
- All tanks are bolted galvanized steel plate

b) Containment design, construction materials, and volume:

An earthen berm (primary) is constructed around all tanks to a height sufficient to contain two (2) times the capacity of the largest tank at each location.

c) Tank examination methods and procedures:

All field personnel are instructed to observe of all bulk storage tanks within the field. During the periodic facility inspections, the field superintendent or other designated personnel will visually inspect tanks for leakage and signs of corrosion.

## **3. Facility Transfer Operations**

a) Scheduled basis for examinations of above-ground valves and pipelines and saltwater disposal facilities:

All field personnel are instructed to observe all above-ground valves and pipelines. During the periodic inspections for discharged oil, the field superintendent or other designated personnel will visually inspect valves, fittings, and pipelines.

## **4. Oil Drilling and Workover Facilities**

- A blowout preventer (“BOP”) assembly and well control system is installed before drilling below any casing string and as required during workover operations.
- The BOP assembly is capable of controlling any expected wellhead pressure.
- Casing and BOP installations conform to state regulations.

## **5. Tank Truck Loading and Unloading**

- The procedures for loading and unloading meet DOT requirements.
- The loading area is located within the perimeter berm containment area.
- The perimeter berm containment area has a significantly larger capacity than the largest single compartment of the tank truck.
- Before filling and departure of the tank truck, the lowermost drain and all outlets of the vehicle are examined for leakage and, if necessary, tightened, adjusted, or replaced to prevent liquid from leaking.

## Section C: Spill Reporting Requirements

*Note: The reporting requirements and telephone numbers in this section should be posted on-site within the clean-up material shed. Blank incident report forms should also be in the shed.*

### 1. Florida Spill and Release Reporting Requirements<sup>1</sup>

Type of Spill or Release	National Response Center (NRC)	EPA Region IV	FDEP Oil & Gas Program	FDEP Office of Emergency Response
Any size oil or hazardous substance spill <sup>2</sup> into waterway	T	T	T W <sup>4</sup>	T W <sup>3</sup>
Any size saltwater spill into waterway	T <sup>3</sup>	T	T W <sup>4</sup>	T
Oil, <sup>4</sup> hazardous substance, <sup>2</sup> or saltwater spill onto land even if within a diked area <sup>5</sup>			T W <sup>4</sup>	T W <sup>3</sup>
Blowouts, fires, or line breaks involving chemicals or significant amounts of petroleum products			T	T
<i>T = prompt telephone report (as soon as possible, but within 24 hours)</i>				
<i>W = written report (as soon as possible)</i>				

#### Notes:

1. The field superintendent must be notified verbally of all spills as soon as possible. An oil spill incident report should be completed and immediately sent to the field superintendent and to Ed Pollister. All telephone reports to agencies must be made immediately by the field superintendent. If the field superintendent cannot be contacted, the highest ranking personnel available should make the appropriate telephone reports.
2. A hazardous substance spill is reportable if in excess of the reportable quantity established by EPA.
3. Only required for reportable hazardous substance spills (see 2).
4. Only required for spills of 25 gallons or more (or potentially greater than 25 gallons), or for reportable hazardous substance spills (see 2).
5. Only required for spills of 100 barrels or more. However, this call only is not required when the spill is entirely contained within the facility berm (primary). Spills or leaks onto land which are less than the 100 barrel limit will be immediately cleaned up by operating personnel and all spill material disposed of properly to minimize or eliminate the risk of pollution.

## 2. Contact Numbers

<i>Florida Agencies</i>	
<b>FDEP Oil &amp; Gas Program</b>	Levi Sciara: (850) 245-8406 (office) Dave Taylor: (850) 245-7536 (office)
<b>FDEP Office of Emergency Response</b>	West Palm Beach office: (561) 393-5877 24-Hour: 1-800-320-0519
<i>Federal Agencies</i>	
<b>NRC</b>	1-800-424-8802 (202) 426-2675
<b>EPA Region 4</b>	1-800-241-1754 (404) 562-9900

## 3. Information to Provide When Providing Notice

When notifying a state or federal agency to provide notice of a spill or release, provide the following information:

- Your name, location, organization, and telephone number
- Name and address of the party responsible for the incident
- Date and time of the incident
- Location of the incident
- Source and cause of the release or spill
- Types of material(s) released or spilled
- Quantity of materials released or spilled
- Whether water, land, or air was affected by the release or spill
- Danger or threat posed by the release or spill
- Number and types of injuries or fatalities, if any
- Weather conditions at the incident location
- Name of the carrier, truck number, or other identifying information
- Whether an evacuation has occurred
- Other agencies notified or about to be notified
- Any other information that may help emergency personnel respond to the incident

## Section D: Oil Spill Contingency Plan & Commitment of Manpower

### 1. Immediate Response by On-Site Personnel

- Shut off source of spill as soon as possible.
- Extinguish all sources of potential ignition.
- Assess volume of spill and potential for pollution in the immediate and surrounding areas.
- Call for manpower and equipment necessary to contain and remove the discharged oil (see paragraph 4 of this section).
- Call Century Oil to report the spill and to obtain any instructions or assistance which may be appropriate. The field superintendent will inform Ed Pollister of the spill details and will coordinate any actions at the scene of the oil spill.

- Call FDEP personnel in accordance with the table in Section C. Notification procedures must be strictly adhered to in the event of a spill into water, a spill in excess of 100 barrels, or a spill outside the perimeter berm.
- Assess the flammability and personnel exposure hazards associated with containment for cleanup.

## 2. Immediate response by Field Superintendent

- Arrange for additional manpower, containment, and cleanup as warranted by the spill or release. Advise Century Oil of any arrangements.
- Call required information of the spill to Century Oil. Also, request any assistance deemed necessary from Century Oil.
- If warranted, proceed to the spill or release location and supervise the containment and clean-up operations.

## 3. Strategy for Containment and Clean-up Equipment Deployment

- Local supervisor or senior Century Oil employee on scene will take charge of and direct containment and clean up operations.
- Upon receipt of manpower and equipment, the person in charge will direct the construction of appropriate dams, dikes, and other containment facilities to contain the discharged oil.
- Vacuum trucks or sorbents will generally be used to recover the oil once it is contained. The oil must be recovered as rapidly as possible to minimize contamination of the soil and to prevent contamination of the ground water.
- Where possible, all recovered fluids will be returned to the process or tank areas for handling. Absorbents will be considered for final clean up where appropriate.
- Any damaged land will be restored to original condition to the extent possible.
- Field superintendent will be notified of unusual conditions as they may arise and when clean up is completed.

## 4. Available Equipment

Equipment available to this facility are:

Type	Amount	Location
3M Pads	2 Bales	On-site storage shed
Misc. hand tools, rakes, shovels, etc.		On-site storage shed
Mini boom	100 ft.	On-site storage shed
Fiberpearl	2 Sacks	On-site storage shed
Fire Extinguisher	1	On-site storage shed

## Section E: Inspection Procedures

### 1. Inspection Procedure

Fluid containing any trace of oil, such as a sheen, rainbow, or oil discoloration, will *not* be released to the perimeter berm area from the berm area around the primary tanks.



Rainwater accumulation from the berm (primary) may be drained to the ground outside of this area to the area within the perimeter berm if the following procedures are followed:

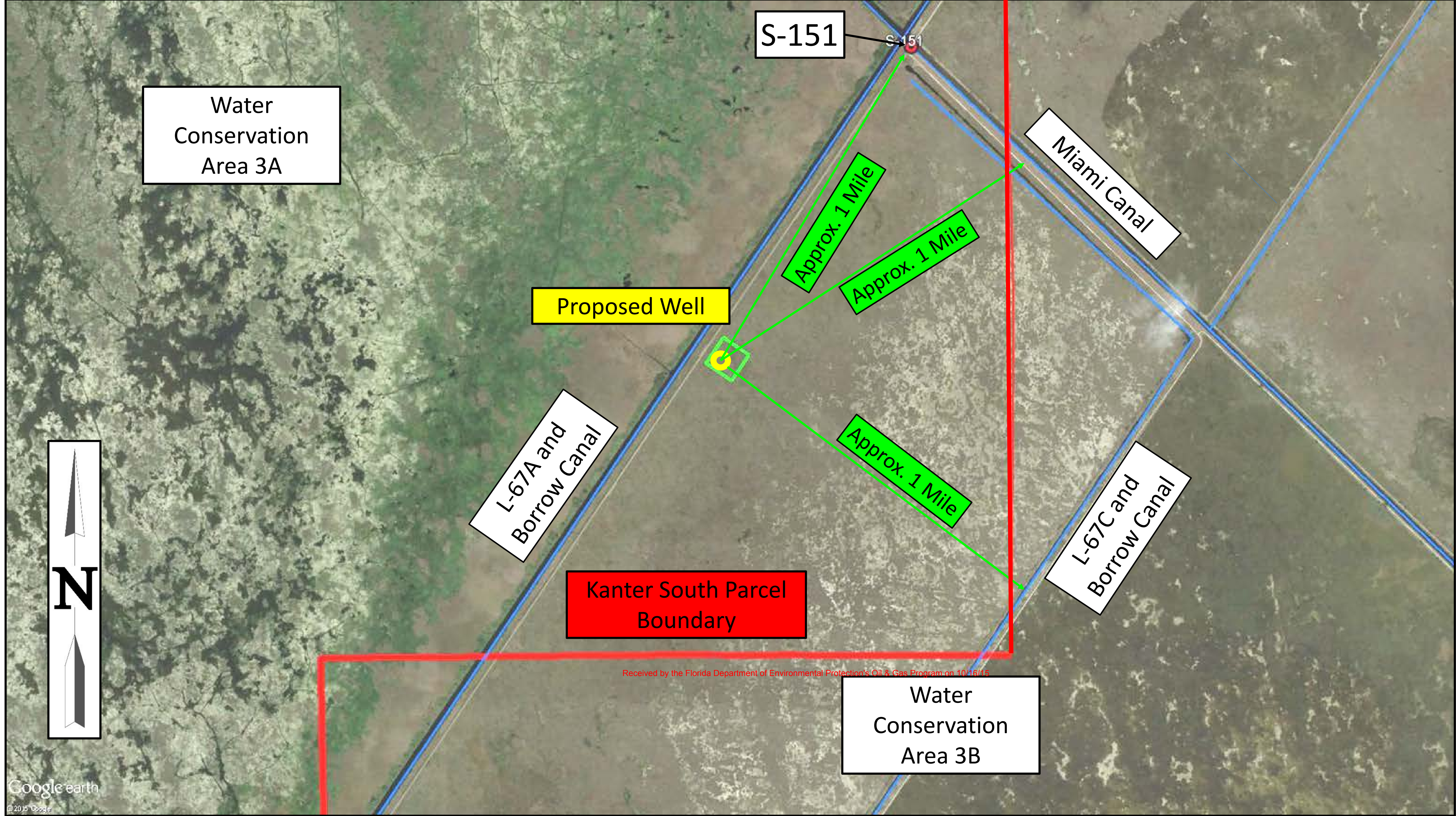
- Visually observe the fluid for any trace of oil and test for the presence of salt water. Any oil must be absorbed using available clean-up materials prior to discharge. No saltwater may be discharged from the primary storage tank area.
- Unlock the valve and position for draining oil and salt water-free fluid. All drainage activities must be conducted while appropriate personnel are on-site. Under no circumstances is an open drain to be left unattended.
- Record the applicable information on the inspection/drainage report posted inside the storage shed and sign where indicated.
- Reposition valve in the non-drain position and lock.

## **2. Implementation Requirements**

The designated person accountable for implementation of the following items will be the field superintendent or Ed Pollister:

- Upon approval of this spill prevention and clean-up plan, an initial spill prevention briefing will be conducted. If the well goes beyond the test phase, an annual briefing will be conducted thereafter. The need for good “housekeeping” and equipment maintenance practices in our daily operations will be emphasized at these meetings. A record of all spill prevention and clean-up plan meetings must be maintained.
- All plant and field employees should observe any potential holding areas that may contain oil accumulations. Further, the superintendent or the superintendent’s designee will complete an inspection of the facility for the sole purpose of locating discharged oil. If the well goes beyond the test phase, this will be conducted annually and recorded in the record of drainage and inspections.
- Valves and locks must be maintained on all bermed area drains.
- The drainage procedure described in this Section E must be followed when discharging any fluid from a diked area. Each discharge must be recorded on the record of drainage and inspections.

6.2 Location plat that specifies the distance to rivers and other prominent features



Received by the Florida Department of Environmental Protection's Oil & Gas Program on 10/16/15

**THE CAROL GROUP, INC**

*Professional Engineers and Surveyors*

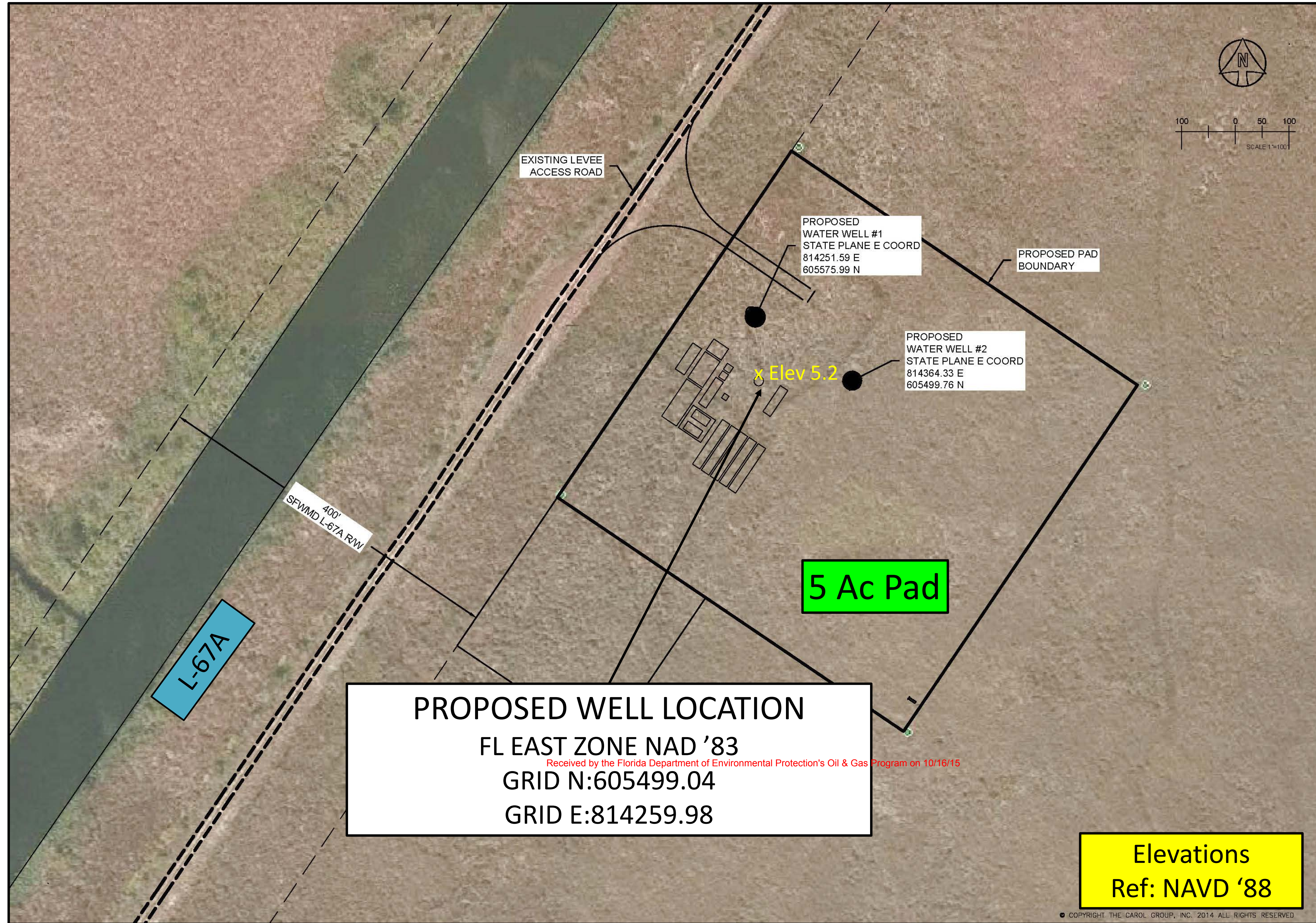
**208 Dal Hall Boulevard  
Lake Placid, FL 33852**

**Kanter 23-2  
Freshwater Resources  
Broward County, FL**

DATE:	PROJECT NO.
FILE NO.	SCALE

SHEET NUMBER  
**6.2**

### 6.3 Plat identifying location of the oil well, drill pad and water wells



**PROPOSED WELL LOCATION**  
FL EAST ZONE NAD '83  
Received by the Florida Department of Environmental Protection's Oil & Gas Program on 10/16/15  
GRID N:605499.04  
GRID E:814259.98

**Elevations**  
Ref: NAVD '88

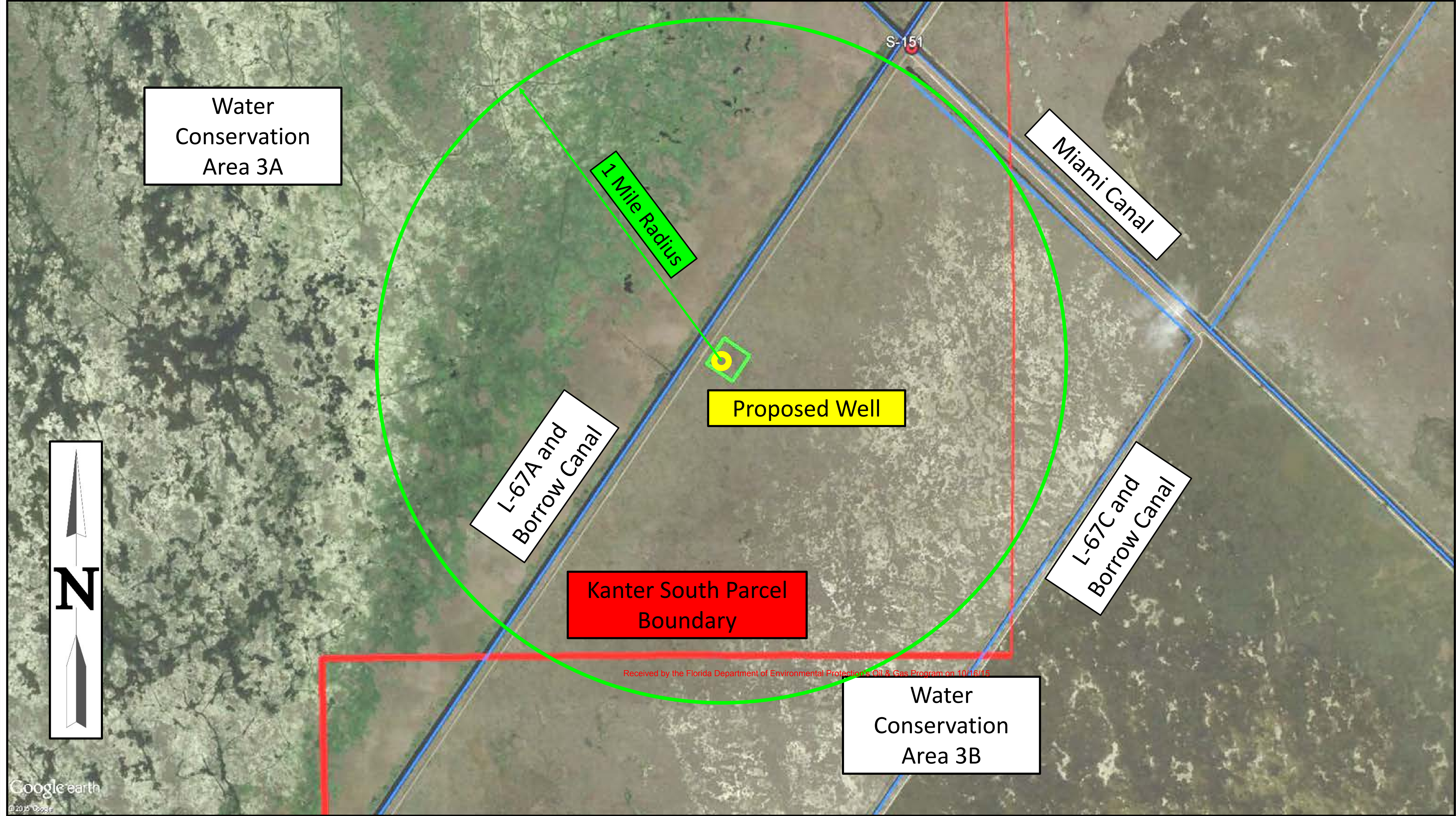
**THE CAROL GROUP, INC.**  
*Professional Engineers and Surveyors*  
**208 Dal Hall Boulevard**  
**Lake Placid, FL 33852**

**Kanter 23-2**  
**OnSite Water Well Location**  
**Broward County, FL**

DATE:	PROJECT NO.:
FILE NO.:	SCALE:

SHEET NUMBER  
**6.3**

6.4(a) Plat identifying all freshwater resources within one mile of the proposed drilling location



Google earth  
© 2015 Google



Water Conservation Area 3A

1 Mile Radius

Proposed Well

L-67A and Borrow Canal

Miami Canal

L-67C and Borrow Canal

Kanter South Parcel Boundary

Water Conservation Area 3B

Received by the Florida Department of Environmental Protection's Oil & Gas Program on 10/16/15

**THE CAROL GROUP, INC.**

*Professional Engineers and Surveyors*

**208 Dal Hall Boulevard  
Lake Placid, FL 33852**

**Kanter 23-2  
Freshwater Resources  
Broward County, FL**

DATE:	PROJECT NO.:
	FILE NO.:
	SCALE:

SHEET NUMBER  
**6.4(a)**

6.4(b) Construction pollution plan



# Construction Pollution Prevention Plan

Prepared by:  
The Carol Group, Inc.



For: Kanter Real Estate, LLC

October 16, 2015

**CONSTRUCTION POLLUTION PREVENTION PLAN**  
for  
**Kanter 23-2**

SITE DESCRIPTION			
Project Name and Location: (Latitude, Longitude, or Address)	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;"><b>Kanter 23-2</b> <b>X:81:31:07.24W</b> <b>Y:25:59:55.22N</b></td> <td style="width: 50%; padding: 5px;">Owner Name and Address: <b>Kanter Real Estate, LLC</b> <b>2601 S Bayshore Dr</b> <b>Miami, FL 33133</b></td> </tr> </table>	<b>Kanter 23-2</b> <b>X:81:31:07.24W</b> <b>Y:25:59:55.22N</b>	Owner Name and Address: <b>Kanter Real Estate, LLC</b> <b>2601 S Bayshore Dr</b> <b>Miami, FL 33133</b>
<b>Kanter 23-2</b> <b>X:81:31:07.24W</b> <b>Y:25:59:55.22N</b>	Owner Name and Address: <b>Kanter Real Estate, LLC</b> <b>2601 S Bayshore Dr</b> <b>Miami, FL 33133</b>		
Description: (Purpose and Types of Soil Disturbing Activities)	Construction of Oil Well Pad. Dredge and Fill Activities.		
<p>Construction in this project will generally consist of site clearing, and construction of subdivision infrastructure and master drainage system.</p> <p>Soil disturbing activities will include: clearing and grubbing, , perimeter berming and other erosion and sediment controls; grading; storm sewer; lake excavation; construction of roads; and preparation for final planting, sodding, seeding and mulching.</p>			
Runoff Coefficient:	<b>0.45</b>		
Site Area:	<b>7.10 AC</b>		
Site Map Includes:	<ol style="list-style-type: none"> <li>1. Drainage patterns.</li> <li>2. Approximate slopes after major grading activities.</li> <li>3. Areas of soil disturbance.</li> <li>4. Outline all areas that are not to be disturbed.</li> <li>5. Location of all major structural and non-structural controls.</li> <li>6. The location of expected stabilization practices.</li> <li>7. Wetlands and surface waters.</li> <li>8. Locations where stormwater may discharge to a surface water or MS4.</li> </ol>		
Soil Information:	See Soils Map		
Stormwater Information:	<p>Total area of the site to be disturbed: <b>7.10 AC</b></p> <p>Existing data describing the soil or quality of any stormwater discharge from the site: See Soils Map</p> <p>Estimate the drainage area size for each discharge point: <b>5.03 AC</b></p>		
Sequence of Major Activities:			
The order of activities will be as follows:	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%; padding: 5px;"> <ol style="list-style-type: none"> <li>1. Installation of stabilized construction entrance.</li> <li>2. Partial clearing and grubbing.</li> <li>3. Install perimeter berm(s) or silt fences with straw bale barrier(s).</li> <li>4. Continue clearing and grading.</li> <li>5. Stockpile excavated soil.</li> <li>6. Stabilize denuded areas and stockpiles within 21 days of last construction activity in that area.</li> </ol> </td> <td style="width: 50%; padding: 5px;"> <ol style="list-style-type: none"> <li>7. Complete grading, subgrade and base course construction.</li> <li>8. Complete grading and install permanent seeding and plantings.</li> <li>9. When all construction activity is complete and the site is stabilized, remove temporary earth berms, straw bale barriers and filter fences and re-seed any areas disturbed by their removal.</li> </ol> </td> </tr> </table>	<ol style="list-style-type: none"> <li>1. Installation of stabilized construction entrance.</li> <li>2. Partial clearing and grubbing.</li> <li>3. Install perimeter berm(s) or silt fences with straw bale barrier(s).</li> <li>4. Continue clearing and grading.</li> <li>5. Stockpile excavated soil.</li> <li>6. Stabilize denuded areas and stockpiles within 21 days of last construction activity in that area.</li> </ol>	<ol style="list-style-type: none"> <li>7. Complete grading, subgrade and base course construction.</li> <li>8. Complete grading and install permanent seeding and plantings.</li> <li>9. When all construction activity is complete and the site is stabilized, remove temporary earth berms, straw bale barriers and filter fences and re-seed any areas disturbed by their removal.</li> </ol>
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CONTROLS		
	Erosion and Sediment Controls	
Stabilization Practices		
<p>Temporary Stabilization: Top soil stock piles and disturbed portions of the site where construction activity temporarily cease for at least 21 days will be stabilized with temporary seed and mulch no later than 14 days from the last construction activity in that area. The seed shall be Bahia, millet, rye, or other fast-growing grasses. Prior to seeding, fertilizer or agricultural limestone shall be applied to each area to be temporarily stabilized. After seeding, each area shall be mulched with the mulch disked into place. Areas of the site which will be paved will be temporarily stabilized by applying limerock subgrade until bituminous pavement can be applied.</p>		
<p>Permanent Stabilization: Disturbed portions of the site, where construction activities permanently cease, shall be stabilized with sod, seed and mulch, landscaping, and/or other equivalent stabilization measures (e.g., rip-rap, geotextiles) no later than 14 days after the date of the last construction activity. The sod shall typically be Floratam or Bahia sod. Prior to seeding, fertilizer or agricultural limestone shall be applied to each area to be temporarily stabilized. After seeding, each area shall be mulched with the mulch disked into place.</p>		

## CONTROLS (Continued)

### Structural Practices

Silt Fence / Straw Bale Barrier - will be constructed along those areas of the project that border adjacent wetlands or lakes – if applicable.

Straw Bale Drop Inlet Sediment Filter - will be placed around all constructed storm drain inlets immediately upon completion of construction and shall remain in-place until the contributing drainage area is stabilized. Alternatively, grate inlets can be covered with filter fabric material until stabilization. Turbidity barriers for discharge locations into adjacent storm water lake.

### Storm Water Management

The project will utilize a wet detention system to provide the required water quality treatment and attenuation. Discharges from the water management system will be regulated by a water control structure. The water control structures will also be used to restrict the discharges from the project as described above.

DISCHARGE RATES: **4.34 cfs**

## OTHER CONTROLS

### Waste disposal:

#### Waste Materials:

All waste materials will be collected and stored in a trash dumpster which will meet all local and State solid waste management regulations. All trash and construction debris from the site will be deposited in this dumpster. The dumpster will be emptied as required due to use and/or State and local regulations, with the trash disposed of at the appropriate landfill operation. No construction waste materials will be buried onsite. All personnel will be instructed regarding the correct procedure for waste disposal. Notices stating these practices will be posted in the construction office trailer.

#### Hazardous Waste:

All hazardous waste materials will be disposed of in the manner specified by local or State regulation or by the manufacturer. Site personnel will be instructed in these practices.

#### Sanitary Waste:

All sanitary waste will be collected from the portable units by a local, licensed, Lee County sanitary waste management contractor, as required by local regulation.

### Offsite Vehicle Tracking:

A stabilized construction entrance has been provided to help reduce vehicle tracking of sediments. As they are completed, paved streets will be swept as needed to remove any excess muck, dirt, or rock tracked from the site. Dump trucks hauling material from the construction site will be covered with a tarpaulin.

## TIMING OF CONTROLS/MEASURES

Installation of hay bail / silt fence barriers (around wetlands) and stabilized construction entrance will be constructed prior to extensive clearing or grading of any other portions of the site. Areas where construction activity temporarily ceases for more than 21 days will be stabilized with a temporary seed and mulch within 14 days of the last disturbance. Once construction activity ceases permanently in an area, that area will be stabilized with permanent sod, seed and mulch, landscaping, and/or other equivalent stabilization measures (e.g., rip-rap, geotextiles). After the entire site is stabilized, the silt fence / straw bale barriers can be removed.

## CERTIFICATION OF COMPLIANCE WITH FEDERAL, STATE, AND LOCAL REGULATIONS

The storm water pollution prevention plan reflects the United States Environmental Protection Agency and the South Florida Water Management District (SFWWD) requirements for storm water management and erosion and sediment control, as established in the Chapter 40E-4 FAC and Chapter 373 FS.

## MAINTENANCE/INSPECTION PROCEDURES

### Erosion and Sediment Control Inspection and Maintenance Practices

These are the inspection and maintenance practices that will be used to maintain erosion and sediment controls.

- ◆ All control measures will be inspected at least once each week and following any storm event of 0.5 inches or greater.
- ◆ All measures will be maintained in good working order; if a repair is necessary, it shall be corrected as soon as possible, but in no case later than 7 days after the inspection.
- ◆ Built up sediment will be removed from silt fence when it has reached one-half the height of the fence.
- ◆ Silt fence will be inspected for depth of sediment, tears, to see if the fabric is securely attached to the fence posts, and to see that the fence posts are firmly in the ground.
- ◆ Temporary seeding and permanent sodding and planting will be inspected for bare spots, washouts, and healthy growth.
- ◆ A maintenance inspection report will be made after each inspection. A copy of the report form to be completed by the inspector is attached.
- ◆ The Owner will appoint one individual who will be responsible for inspections, maintenance and repair activities, and for completing the inspection and maintenance reports.
- ◆ Personnel selected for inspection and maintenance responsibilities will receive training from the site superintendent. They will be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used onsite in good working order.
- ◆ On site detention basin will be used for sediment basin.

### Non-Storm Water Discharge

It is expected that the following non-storm water discharges will occur from the site during the construction period:

- ◆ All non-storm water discharges will be directed to the storm water management facilities prior to discharge.

### INVENTORY FOR POLLUTION PREVENTION PLAN

The materials or substances listed below are expected to be present onsite during construction:

- |                             |                            |
|-----------------------------|----------------------------|
| ◆ Concrete                  | ◆ Fertilizers              |
| ◆ Detergents                | ◆ Cleaning Solvents        |
| ◆ Paints (enamel and latex) | ◆ Wood                     |
| ◆ Metal Studs               | ◆ Clay or concrete bricks  |
| ◆ Asphalt                   | ◆ Petroleum Based Products |
|                             | ◆ Masonry Block            |

## SPILL PREVENTION

### Material Management Practices

The following are the materials management practices that will be used to reduce the risk of spills or other accidental exposure of materials and substances to storm water runoff.

#### Good Housekeeping:

The following good housekeeping practices will be followed onsite during the construction project:

- ◆ An effort will be made to store only enough product required to do the job.
- ◆ All materials stored onsite will be stored in a neat, orderly manner in their appropriate containers, and if possible, under a roof or other enclosure.
- ◆ Products will be kept in their original containers with the original manufacturer's label.
- ◆ Substances will not be mixed with one another unless recommended by the manufacturer.
- ◆ Whenever possible, all of a product will be used up before disposing of the container.
- ◆ Manufacturers' recommendations for proper use and disposal will be followed.
- ◆ The site superintendent will inspect to ensure proper use and disposal of materials onsite.

#### Hazardous Products:

These practices are used to reduce the risks associated with hazardous materials:

- ◆ Products will be kept in original containers unless they are not resealable.
- ◆ Original labels and material safety data will be retained; they contain important product information.
- ◆ If surplus product must be disposed of, manufacturers' or local and State recommended methods for proper disposal will be followed.

### Product Specific Practices

The following product specific practices will be followed onsite:

#### Petroleum Products:

All onsite vehicles will be monitored for leaks and receive regular preventive maintenance to reduce the chance of leakage. Petroleum products will be stored in tightly sealed containers which will be clearly labeled. Any asphalt substances used onsite will be applied in accordance with the manufacturer's recommendations and standard construction practices.

#### Fertilizers:

Fertilizers will be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer will be worked into the soil to limit exposure to storm water. Storage will be in a covered shed. The contents of any partially used bags of fertilizer will be transferred to a sealable plastic bin to avoid spills.

#### Paints:

All containers will be tightly sealed and stored when not required for use. Excess paint will not be discharged to the storm sewer system but will be properly disposed of according to manufacturers' instructions and/or state and local regulations.

## SPILL PREVENTION (Continued)

### Spill Control Practices

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup.

- ◆ Manufacturers' recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies.
- ◆ Materials and equipment necessary for spill cleanup will be kept in the material storage area onsite. Equipment and materials will include--but not be limited to--rags, gloves, goggles, kitty litter, sand, and plastic and metal trash containers specifically for this purpose.
- ◆ All spills will be cleaned up as soon as possible after discovery.
- ◆ The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- ◆ Spills of toxic or hazardous material will be reported to the appropriate state or local government agency, regardless of the size.
- ◆ The spill prevention plan will be adjusted to include measures to prevent this type of spill from reoccurring and how to clean up the spill if there is another one. A description of the spill, what caused it, and the cleanup measures will also be included.
- ◆ The Contractor's site superintendent will be responsible for the day-to-day site operations and will be the spill prevention and cleanup coordinator. He will designate at least two other site personnel who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of responsible spill personnel will be posted in the material storage area and in the office trailer onsite.

**POLLUTION PREVENTION PLAN CERTIFICATION**

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signed: \_\_\_\_\_

Print Name: \_\_\_\_\_

Title: \_\_\_\_\_

Date: \_\_\_\_\_

**CONTRACTOR'S CERTIFICATION**

I certify under penalty of law that I understand the terms and conditions of the general National Pollutant Discharge Elimination System (NPDES) permit that authorizes the storm water discharges associated with industrial activity from the construction site identified as part of this certification.

Signature	For	Responsible for
_____ Date: _____		
_____ Date: _____		
_____ Date: _____		
_____ Date: _____		









CONSTRUCTION POLLUTION PREVENTION PLAN  
for  
South Lee Industrial Park

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**Inspection And Maintenance Report Form**

CHANGES REQUIRED TO THE POLLUTION PREVENTION PLAN:

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REASONS FOR CHANGES:

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I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

6.4(c) Safety plan

# **Century Oil Co., Inc.**



## **Kanter Real Estate, LLC**

Kanter 23-2

Broward County, FL, US

## **SAFETY PLAN**

Prepared By:

Ed Pollister

P.O. Box 765

Chokoloskee, FL 34138

239-695-2276

# SAFETY MANUAL

## POLICY STATEMENT

The management of Pollister Drilling Corp. recognizes the importance of safety and health and is committed to providing a workplace for our employees that is free of recognized hazards. All hazards will be controlled or eliminated. The philosophies and objectives behind this commitment are as follows:

- A. The safety and health of all Pollister Drilling Corp. employees is a priority.
- B. All employees will be required to make safety and the safety of their coworkers a priority.
- C. As a condition of employment, each individual within the organization will be expected to conduct their daily tasks in a manner consistent with the philosophy and objectives of this policy as well as any safety rules or procedures that the Company practices.

With these goals in mind the Pollister Drilling, Corp. Safety and Health Program will include:

- Providing adequate safeguards to the maximum extent that is possible.
- Conducting health and safety inspections to identify and eliminate unsafe working conditions or practices, to control health hazards, and to comply with all state and federal standards.
- Training all employees in health and safety practices.
- Providing necessary personal protective equipment and instructions for it's use and care.
- Developing, updating and enforcing health and safety rules and requiring that all Employees cooperate with these regulations.
- Investigate, promptly and thoroughly, every accident and incident to determine cause and to take action to prevent any reoccurrence.

In closing, it is imperative that every employee, no matter what level in the organization, do his or her part in supporting safety. No job or task is so important that we cannot take the time to perform it safely. Adherence to this policy and our safety program will provide safer working conditions for everyone.

DATE

SIGNATURE

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# Orientation for New Employees

The purpose of an orientation is to introduce new workers to our company and to what is expected of them while they are working for us. This orientation includes:

- An interview that covers our industry at work and our company's Safety Program. New employees are told what is expected of them on the job, including what we may do if they fail to follow safety rules. They also will be told about employee benefits, how they will receive their pay, and what we are willing to do to help them with either on the job or personal problems.
- Tour of rig and work areas.
- Discussion of proper lifting procedures.
- Provide and train in PPE usage.
- Provide specific safety rules and procedures for areas where you will work.
- Information on how to report accidents and near miss incidents.
- Information on where to keep personal belongings.
- Information on pay procedures.
- Explanation on Lockout procedures.
- Information on the Emergency Action Plan.
- Explanation of the Confined Space Procedures.
- Explanation on the HAZCOM program.
- Explain where to find MSDS.
- Explain work place violence.
- Explain work place sexual harassment.

Pollister Drilling Corp. is very serious about safety. We want you to also think seriously about safety, both your own safety and the safety of others.

Safety is the responsibility of every employee. Most injuries occurring in our industry are preventable. One does not need to suffer an injury trying to get a job done. When you see an unsafe act or an unsafe condition, correct it yourself immediately or ask your supervisor for helping getting it corrected. If you have any problems, such as dizziness, trouble breathing, bad back, have fainting spells, personal problems, ECT, which could affect your work, let your supervisor know about it. Supervisors need to know so you won't be placed in a situation where you could hurt yourself or others.

Safety is accomplished through effective communication, sincere desire, honest effort, common sense, and support by every one. Merely talking about safety does not prevent accidents.

Your supervisor will hold periodic safety meetings for the entire crew. You are required to attend. Contribute your know-how for less experienced and ask questions if you don't understand. Please feel free to express any of your safety concerns or suggestions during these meetings individually to your supervisor, or in writing on a safety suggestion form. (This will allow you to remain anonymous if you so desire; however, this will make it difficult to provide you special recognition



if your suggestion is put into action.) Be assured that all safety suggestions and concerns will receive response.

Learn the materials in this booklet that pertain to your work. Refer to this material and to your supervisor before starting any task that may be unfamiliar to you. Be aware of other activities nearby that may create hazards to you or which may affect your work.

# Responsibilities

## **Management will:**

- ❑ Provide for all employees a work environment free from unacceptable hazards.
- ❑ Provide guidance to ensure that all injuries, vehicle collisions, near misses, fires, and any other unsafe conditions are promptly reported and investigated.
- ❑ Ensure that employees have proper tools and training to complete each job safely.
- ❑ Ensure that all employees and contractors are qualified to perform assigned tasks.
- ❑ Communicate to all employees and contractors the safety policies and procedures of the company.
- ❑ Demonstrate the level of safety that we expect. Lead by example.
- ❑ Communicate and support the use of required Personal Protective Equipment.
- ❑ Observe, resolve and discuss safe or unsafe behaviors as soon as they are observed.
- ❑ Ensure that safety and health issues are considered before awarding contracts.
- ❑ Conduct routine inspections and observations to insure unsafe conditions and behaviors are addressed.
- ❑ Conduct/assign periodic safety meetings and assure every safety meeting is properly documented.

## **Employees will:**

- ❑ Demonstrate responsibility for their own safety and the safety of their fellow employees.
- ❑ Immediately report all injuries, vehicle collisions, near misses, fires, and any other unsafe conditions to their supervisor and if possible correct the situation immediately.
- ❑ Participate in area safety/tailgate meetings.
- ❑ Assist in incident investigations as needed.
- ❑ Observe and discuss any unsafe condition, behavior and/or practice with fellow employees and your supervisors.
- ❑ Understand and comply with all safety rules and policies that are applicable to the location.
- ❑ Know safe procedures for carrying out their job responsibilities.
- ❑ Become familiar with Emergency Action Plans.

## **SAFETY RULES AND REGULATIONS**

Pollister Drilling Corp. will enforce compliance of its safety policies and procedures.

1. Report all injuries, near misses, vehicle collisions, fires, and any unsafe conditions or practices no matter how slight to your supervisor.
2. When lifting or moving loads, assess the weight, bulkiness of the item and the route of travel. Use proper lifting techniques. When the load is too heavy for one person to lift, the worker should ask for assistance or use a mechanical lifting device.
3. Use handrails when ascending or descending stairways.
4. The use, possession and distribution of illegal drugs, weapons or unauthorized explosives while on company premises, in company vehicles, or rental/personal vehicles while on company business is prohibited.
5. Operation of equipment having a "DANGER DO NOT USE" tag is prohibited.
6. Do not use equipment that has required guards missing.
7. Finger rings, loose clothing, unsecured long hair, watches, and loose clothing should not be worn within arms length of operating machinery.
8. Always use proper tools and equipment for the assigned job. Do not use a damaged or incorrect tool to perform a task. Damaged tools are to be replaced or discarded.
9. Erect barricades, flags or barricade tape around areas of hazardous work, holes, floor openings, overhead work zones, and exposed energized circuits. Excavations should be flagged or fenced when in populated areas.
10. Fire extinguishers, eyewash stations and self-breathing apparatuses should be inspected monthly. Alarm boxes, fire doors, first aid kits and all other emergency equipment must be well maintained and readily accessible.
11. Smoking on company premises is restricted to designated areas only.
12. Whenever a safety device is removed from service and/or defeated, the appropriate supervisor and affected parties shall be notified, the device tagged, the proper remedial action taken, and the action properly documented.
13. Acts of violence or harassment towards management or another employee may be grounds for immediate discharge.
14. Horseplay and fighting are strictly prohibited.

## **TRAINING**

Pollister Drilling Corp. employees share a responsibility for their own safety as well as safety on the job as a whole. This means that all workers should be trained in the safety practices that apply to their specific jobs. Every worker should not only know how to prevent accidents but also what to do in case an accident happens. Initial training and periodic retraining are essential if the safety program is to be effective.

All workers should be trained in safety rules and in safe use of all equipment they will operate. No worker should operate equipment for which he or she has not been trained. Periodic training sessions will be held to update and review previous training. Workers should be able to demonstrate that training has been effective. Records of training will be kept on file including training topics, time of training and who conducted the training.

If employees are required to wear P.P.E. they will be trained in the proper use and maintenance of such equipment.

The following training may be given to those employees who have specific job responsibilities.

FIRE PREVENTION  
FIRE EXTINGUISHER USE  
ACCIDENT INVESTIGATION  
PERSONAL PROTECTIVE EQUIPMENT  
LOCKOUT/TAGOUT  
FALL HAZARD  
HAZCOM  
EMERGENCY ACTION PLAN  
H2S

## **EMERGENCY RESPONSE PROCEDURES**

All emergency phone numbers shall be posted in offices, shops and at job sites.

FIRE DEPARTMENT **911**  
POLICE DEPARTMENT **911**

**AMBULANCE 911**  
**POSITION CENTER 1-800-222-1222**

Evacuation and emergency procedures will be determined at each job site.  
First aid kits will be in company vehicles, and in the shop.  
Fire fighting policy will be determined by level of employee training.  
Serious weather policy will be dictated by local policy (I.E. Tornado take cover, incimate weather alerts).

### **For Fires**

In the event of a fire the following will take place:

- ❑ The person spotting the fire will notify the other persons in the office, shop or job site to evacuate the building/site.
- ❑ The office manager will sweep the office; the shop supervisor will sweep the shop assuring that everyone exited the building.
- ❑ The persons exiting the buildings will assemble in the southeast part of the parking lot and the office manager/shop supervisor will take a head count to determine that persons evacuated and are accounted for.
- ❑ Using a cell phone call 911 to report the fire.
- ❑ Employees who have received fire extinguishers training may use a fire extinguisher to extinguish an incipient stage fires.
- ❑ In advent of a fire at a job site the tool pusher will be the person responsible for evacuation, head count, and determining an assembly area for the employees. These plans will be reviewed prior to the start of every job.

### **For Tornadoes**

Upon hearing the local tornado alarm or a take cover warning on the radio the following will take place:

- ❑ Employees will go to the tornado shelter in the basement or restrooms of the office/shop.
- ❑ Office manager/shop supervisor will sweep the office/shop areas to assure all employees have gone to the shelter areas to take cover.
- ❑ Office manager/shop supervisor will take a head count to account for all of the persons in the office at the time of the alarm.
- ❑ Persons will remain in the shelter area until an all clear has been announced.
- ❑ In the advent of this happening in the field the shelter will be determined at the site prior to the job starting.

## **Fire Response Procedures**

In case of a fire the following procedures should be used:

1. The first two minutes of a fire are the most critical. Assess the situation and **SUMMON FOR HELP**; activate the alarm systems (alarm box, PA system, sirens, or word of mouth) as appropriate, and evacuate the area. Notification must be made to the next level of supervision after a fire is contained.
2. Only trained personnel should operate fire extinguishers and fire equipment. Never fight a fire if you do not know the cause or source or if it is beyond the initial stage.
3. Give direction to third party fire-fighting agencies.

### **Fire Extinguishment Procedures**

1. Locate the fire fighting equipment. Note: **WHEN DISCHARGING A CARTRIDGE-TYPE EXTINGUISHER, POINT THE FILL CAP AWAY FROM YOURSELF OR OTHERS.**
2. With any wind at your back, approach the fire and discharge the extinguisher at the base of the fire, sweeping back and fourth and advance as the fire is extinguished.
  - a) The proper use of a fire extinguisher can be abbreviated to these letters  
**PASS:**
    - Pull pin
    - Aim at base of fire
    - Squeeze the trigger
    - Sweep from side-to-side
  - b) Be sure the fire extinguishers are charged. Turn in the extinguishers for charging after every use.
3. After the fire is extinguished or if you are unable to extinguish, back away facing the fire. Never turn your back on a fire. Stand-by to ensure that an extinguished fire remains extinguished.

## **Fire Extinguisher Safety**

**In order to understand how a fire extinguishers work, you first need to know a little about fire.**

**Four things must be present at the same time in order to produce fire:**

- Enough **oxygen** to sustain combustion,
- Enough **heat** to raise the material to its ignition temperature,

- Some sort of **fuel** or combustible material, and
- The **chemical, exothermic reaction** that is fire.

Oxygen, heat, and fuel are frequently referred to as the “Fire Triangle”. Add in the fourth element, the chemical reaction, and you actually have a fire “Tetrahedron”. The important thing to remember is: **Take any of these four things away, and you will not have a fire or the fire will be extinguished.**

**Essentially, fire extinguishers put out fire by taking away one or more elements of the fire triangle/tetrahedron.**

**Fire safety**, at its most basic, is based upon the principle of keeping fuel sources and ignition sources separate.

There are basically four different types (classes) of fire extinguishers. Each is designed for use on specific types of fires.

### **Fire Extinguisher Ratings**

**Class A** extinguishers should be used on fires of ordinary combustible materials (such as wood, cloth, paper, rubber, and many plastics) requiring the heat-absorbing (cooling) effects of water.

**Class B** extinguishers should be used on fires of combustible liquids, flammable gases, greases and similar materials where extinguishment is best done by excluding air (oxygen), inhibiting the release of combustible vapors, or interrupting the combustion chain reaction.

**Class C** extinguishers are suitable for use on electrically energized fires.

**Class D** extinguishers are designed for use on flammable metals, such as magnesium, titanium, sodium, potassium, etc..

### **Types of Fire Extinguishers**

**Dry Chemical** extinguishers are usually rated for multi-purpose use. They contain an extinguishing agent and use compressed, non-flammable gas as a propellant.

**Halon** extinguishers contain a gas that interrupts the chemical reaction that takes place when fuels burn. These types of extinguishers are often used to protect valuable electrical equipment since they leave no residue to clean up. Halon extinguishers have a limited range, usually 4 to 6 feet, and are very expensive to refill.

**Halotron** extinguishers are a non-ozone depleting alternative to halon.

**Water** extinguishers contain water and compressed gas and should be only used on Class A (ordinary combustibles) fires.

**Carbon Dioxide** (CO<sub>2</sub>) extinguishers are most effective on Class B and C (liquids and electrical) fires. Because the gas disperses quickly, these extinguishers are only effective fro

### **How to use a Fire Extinguisher**

Even though extinguishers come in a number of shapes and sizes, they all operate in a similar manner. Here's an easy way to remember how to use one: **P A S S Pull, Aim, Squeeze, and Sweep.**

**Pull** the pin at the top of the extinguisher that keeps the handle from being accidentally pressed.

**Aim** the nozzle at the base of the fire. And start about 8 feet from the fire.

**Squeeze** the handle to discharge the extinguisher (if you release the handle the discharge stops).

**Sweep** the nozzle back and forth at the base of the fire. Even after the fire appears to be out, watch it carefully, as it may re-ignite and always back away never turn your back on an extinguished fire.

## **REPORTING AN ACCIDENT**

All Employees of Pollister Drilling Corp. should report all accidents, near misses, injuries and property damage to a supervisor immediately.

The supervisor upon report of an injury will immediately ensure employee receives necessary medical attention.



To the extent possible the supervisor should assure that the area or equipment involved is properly secured until an investigation into the incident takes place.

The supervisor will do the incident investigation and find the root cause than make sure corrective action takes place.

Any employee having a safety issue or concern should take it up with their immediate supervisor as soon as the issue arises.

## **Accident/Incident Investigation**

Thousands of accidents/incidents occur every day. Most are caused by failure of equipment, people or the environment. Accident/incident investigations are made to determine how and why these failures occurred. By using information found during an investigation, a similar or perhaps more serious accident/incident may be prevented. Accident/incident investigations are targeted towards accident prevention and they are not conducted to place blame.

It is the duty of all employees of Pollister Drilling Corp. to aid in accident/incident investigation. Due to the nature of the business additional training may be required for this purpose.

- Accident/incident investigation has one goal and that is to prevent future accidents/incidents.

- ❑ All accidents resulting in injury or property damage and any incident with the potential to have caused injury or property damage should be investigated.
- ❑ The primary objective is to find the root cause.
- ❑ The secondary objective is to determine corrective action and to prevent an occurrence.

The investigation should:

- ❑ Be conducted as soon as possible after the accident/incident and be done at the site.
- ❑ Take samples of any chemicals if the incident involved spills, vapor release, etc.
- ❑ Photograph or make a sketch of the scene.
- ❑ Identify persons involved.
- ❑ Interview witnesses separately and as soon as possible after the incident.
- ❑ When conducting an interview look for facts not blame.
- ❑ Get complete information about the scene (machine number, equipment identification, etc.).
- ❑ Describe where incident took place including environmental conditions at the time of the incident.
- ❑ Determine corrective action to be taken and make sure it is documented and conveyed to all persons at the site.

The office manager will maintain all accident/incident reports and property loss data.

## **Facility/Job Site Inspections**

Pollister Drilling, Corp. realizes the importance of a safe workplace environment. Therefore supervisors including those in maintenance facilities, field operations, and office buildings, are required to conduct monthly (or at the start of each job on sites) inspections to determine potential hazards within the workplace. These hazards include, but are not limited to, the following examples:

- Broken steps.
- Inadequate/inoperative lighting.
- Blocked emergency exits.
- Fire extinguishers (recharged and inspected as required, accessible).
- Conditions of floors and walkways.
- Handrails.
- Electrical dangers.
- Housekeeping.
- Ensuring that first aid supplies are adequate, available and marked properly.
- Emergency Action plan posted.

- Employees instructed as to Emergency Action plan.
- Fire hazards.
- Guarding in place.
- Slip, Trip and Fall hazards.
- Employees wearing Proper Protective Equipment.
- Lockout in place (when needed).

## **HAZARDOUS MATERIALS**

Pollister Drilling Corp. has established a written Hazard Communication (HAZCOM) program. All current and newly hired employees potentially exposed to chemicals must attend a HAZCOM training program. The program was developed to inform and train employees concerning the use and dangers associated to hazardous chemicals, controlling hazards, proper labeling of containers and understanding how to use Material Safety Data Sheets (MSDS). The written program also outlines how to handle hazard communications as it applies to other persons working on job sites.

### **Hazard Determination**

Pollister Drilling Corp. will rely on material safety data sheets obtained from product suppliers to meet hazard determination requirements.

### **Labeling**

1. The tool pusher will be responsible for seeing that all containers entering the work place are properly labeled.
2. All labels shall be checked for:

1. Identity of material.
  - Appropriate hazard warning for the material.
  - Name and address of the responsible party. (Only if the container is received from the manufacturer, distributor, or importer.)
3. Each employee shall be responsible for ensuring that all portable containers used in the work place are labeled with the appropriate identity and hazard warning.

### **Chemical Material Lists**

1. A listing of all chemicals used by this company will be kept in a log located in the dog house and in the main office.

### **Material Safety Data Sheets (MSDS)**

1. All MSDS will be kept in the dog house and in the supervisory vehicle.
2. Employees desiring a copy of a MSDS may obtain one by requesting for them in writing and giving the request to their supervisor.

### **Employee Information and Training**

The Safety Director shall coordinate and maintain records of employee hazard communication training, including attendance rosters. Before their initial work assignment, each new employee will attend a hazard communication training class; this class will provide the following information and training.

#### Information

- The requirements of the MIOSHA Hazard Communication Standard
- All operations in their work area where hazardous chemicals are present
- Location and availability of the written hazard communication program, the list of hazardous chemicals, and the MSDS

#### Training

- Methods and observations that can be used to detect the presence or release of hazardous chemicals in the work place.
  - Physical and health hazards of the hazardous chemicals.
  - Measures the employee should take to protect themselves from these hazards.
  - Details of the hazard communication program-including explanation of the labeling system and MSDS s and how employees can obtain and use hazard information.
2. The employee shall be informed that:
    - The employer is prohibited from discharging, or discriminating against, an employee who exercises his or her rights to obtain information regarding hazardous chemicals used in the work place.

3. Before any new physical or health hazard is introduced into the work place, each employee who may be exposed to the substance will be given information in the same manner as during the hazard communication class.

### **Basic Rules and Procedures for Working with Chemicals**

1. MSDS sheets must be assessable and readily available at all times. This includes a MSDS for each chemical in the facility.
2. Before a contractor begins work the site supervisor will inform them of any potential chemical hazard and make MSDS available.
3. In case of eye or skin contact with chemicals, promptly flush the area with water for an extended period (15 minutes), remove contaminated clothing and seek medical attention. Emergency eyewash and shower must be within 25 feet of corrosive material.
4. If trained promptly clean up spills using PPE, and dispose of all materials properly.
5. Do not smell or taste chemicals.
6. Do not eat, drink, smoke, chew gum or apply cosmetics in rooms where laboratory chemicals are present. Wash hands before conducting these activities.
7. Do not use glassware or utensils used in laboratory operations to handle food or beverages.
8. Do not store food or beverages in chemical storage areas.
9. All chemicals should be properly labeled and stored.

### **Chemical Handling and Storage**

1. No container should be received, accepted or transported which has been damaged or does not have appropriate labeling.
2. Stored chemicals should be examined periodically (monthly) for replacement, deterioration and container integrity.
3. When containers are hand carried containers should be sealed
4. Incompatible chemicals must not be stored near each other.

### **Understanding a MSDS**

A MSDS is a written information sheet about a specific hazardous chemical in order to facilitate the employees understanding of the MSDS, a component explanation has been included.

**Section 1 Manufacture and Address** – self-explanatory

**Section 2 Hazardous Ingredients/Identity** – Here the chemical and common names of all constituents should be listed. If the products hazard determination was made as a mixture or compound then the common name of the product or chemical name of the compound will suffice.

**Section 3 Physical/Chemical Characteristics** – This section will tell you what to expect from the chemical. This is important to guarantee proper handling, fire and spill response procedures.

**Boiling Point** – The temperature at which the material will boil. If the material is mixed a range will be given.

Vapor Pressure – Tells how much vapor the material may produce. A high vapor pressure indicates that the material will readily evaporate.

Vapor Density – Tells how heavy a vapor is relative to an equal amount of air. A high vapor density will tell that a material will tend to accumulate at the bottom of tanks.

Solubility In Water – Indicates the solubility of the substance in water.

Specific Gravity – Indicates how heavy the material is relative to water.

Evaporation Rate – You must be careful when interpreting evaporation rate data. There are two commonly used bases to derive a figure. Ethyl Ether is used as bases for determining evaporation rates of highly volatile solvents. In this case, values higher than 1 indicate less rapid evaporation than ether. Butyl acetate is the standard used for less volatile solvents and values greater than 1 indicate evaporation rates greater than butyl acetate.

Melting Point – Temperature at which a solid material melts.

Appearance And Color – self-explanatory

**Section 4 Fire and Explosion Hazard Data** – This information is intended to help you in case of an emergency. Special attention should be taken to understand how to interpret the data quickly and correctly.

Flash Point – This figure indicates the temperature at which a material will ignite. There are two methods to determine this closed cup and open cup so the method must be spelled out.

Flammable Limits – This gives the range of concentrations of gas or vapor which will burn or explode if an ignition source is available.

Extinguishing Media – Cites the appropriate extinguishing media for the material.

Special Fire Fighting Precautions – A list of special provisions including personal protective equipment and procedures.

Unusual Fire and Expulsion Hazards - Lists any peculiarities the material may demonstrate during fire fighting procedures, For example, this section could contain the following: “Extremely flammable, water reactive, vapors heavier than air could flow along floor to alternate ignition sources.”

**Section 5 Reactivity Data** – This information helps the user determine safe storage procedures. This section should provide information on material stability and reactivity and should state what other chemicals or substances to avoid when handling the material.

Stability – Tells how easily a material becomes self-reactive and under what conditions it is likely to do so.

Incompatibility – Tells what chemicals that the material come in contact with that should be avoided.

Hazardous Decomposition Or By Products – Lists hazards chemicals that are produced if the material is burned, oxidized or heated.

Hazardous Polymerization – Usually a yes, or no, response indicative of whether or not hazardous polymerization is likely to occur. If yes, then conditions by which the reaction could take place should be listed.

**Section 6 Health Hazard Data** – This section gives pertinent data and effects of exposure.

Routs of Entry – This information tells you how the chemical is most likely to enter the body. Also indicated should be any potential routs of entry in a foreseeable emergency situation.

Health Hazards – Indicates what potential health effects of exposure to the material are and whether the effects are acute or chronic. Acute effects are those that occur from a concentrated dose of the material over a short time. A chronic condition is usually associated with conditions associated with continuous, low level exposures.

Carcinogenicity – Tells if the material is carcinogenic or not.

Signs And Symptoms Of Exposure – The most common symptoms of exposure are described in this section.

Medical Conditions Most Generally Aggravated By Exposure – Those medical conditions generally recognized as aggravated by exposure to the material.

**Section 7 Precautions For Safe Handling** – This section provides specific guidelines for handling this chemical and chemical spills and hazardous disposal.

Steps To Be Taken If Material Is Spilled Or Released – May specifically recommend materials to lean up a spill and actions to be taken to protect people.

Waste Disposal Methods – Recommendations for waste disposal meeting local, state and federal regulations.

Precautions To Be Taken In Handling And Storage – This section recommends storage methods and hazards to avoid.

Other Precautions – Other hazards, which should be noted, will be specifically addressed.

**Section 8 Control Measures** – This section lists protective equipment to be used, types of ventilation and general precautions to consider.

Respiratory Protection – Type of respirator to use

Ventilation – Type of ventilation suggested for working with the material.

Protective Gloves – Recommends types of gloves to be used

Eye Protection – Indicates type of eye protection.

## **PERSONAL PROTECTIVE EQUIPMENT**

Personal Protective Equipment provides a barrier between the hazard and the person. For visitors PPE will be made available on a loaned basis.

### **General Guidelines**

- ❑ Pollister Drilling Corp. management is responsible for conducting personal protective equipment hazard assessments for work exposures in their areas of responsibility. This assessment will be used, as the foundation for determining personal protective equipment needs.
- ❑ Personal protective equipment must meet standards established by recognized governmental and/or industry groups.
- ❑ Personal handling chemicals or other agents must wear proper eye or face protection, respiratory protection as called for in the chemicals MSDS, gloves and aprons.
- ❑ Employees are responsible for proper cleaning and storage of their assigned PPE.
- ❑ Additional eye/face protection such as goggles and/or face shields must be worn during grinding, welding, drilling, scraping or any operation where foreign objects may enter the eye.

### **Head Protection**

- ❑ Approved hard hats are to be worn in field operations and other designated areas.
- ❑ All hard hats shall meet the minimum requirements set forth by ANSI Z89.1.1997 (type 1 or class E hardhats).

### **Eye Protection**

- ❑ Approved safety eyewear with side shields are to be worn in the field operations and other designated areas. ANZI approved eyewear is to be worn over non- ANZI approved eyewear or any not having eye shields.
- ❑ Safety glasses must be equipped with rigid side shields and meet or exceed ANZI Z87.i.
- ❑ Filter lenses are required for arc welding or cutting.

### **Hearing Protection**

- ❑ Hearing protection must be worn in designated high noise areas. (85 dba or higher).



### **Hand Protection**

- ❑ Personal must wear hand protection appropriate for the assigned task when performing work that may cause injury to the hands.
- ❑ Electrical lineman's gloves are to be provided when working in voltages greater than 50 VAC and replaced or tested every six months by an approved independent laboratory. Wearers of the lineman's gloves are to test for holes or leaks before each use. Defective or damaged gloves must not be used. Any glove found defective or damaged should be destroyed and replaced immediately.

### **Foot Protection**

- ❑ Safety shoes are required when managements PPE hazard assessment dictate the need.
- ❑ Safety shoes must meet or exceed ANZI Z41.1 (Compression and impact ratings).

### **Flame Resistant Clothing**

- ❑ Flame resistant clothing is required when management's hazard assessment dictates the use.
- ❑ Flame resistant clothing must meet or exceed Federal Test Standard CS-191A (<2.0 second after flame and no more than 6.0 inches char length).

### **Fall Hazard**

- ❑ Fall protection equipment shall be worn when working 6 feet or more above an established working surface.
- ❑ Fall protection equipment will be used when working conditions dictate.
- ❑ Fall protection equipment is required at all times regardless of heights when immediate danger exists below the working surface and when no guardrails are present.
- ❑ A Fall Arrest System shall consist of a full body harness, shock-absorbing lanyard, and double locking snap hook attached to a stationary approved anchor point. Other fall protection systems may include a self retracting lanyard a cable grabbing device and cable restraint system.
- ❑ Employees shall inspect the fall protection system prior to each use.
- ❑ Remove from service and item/component that has experienced a fall.

### **Respiratory Protection**

- ❑ Respiratory protection is required when working in areas where respiratory hazards are present. Some hazards may be H2S, galvanized pipe welding, spray-painting, sandblasting and asbestos.
- ❑ Only properly trained and medically approved persons are allowed to use respirators.
- ❑ Respirators will be chosen that are proper for the associated hazard.

# Confined Space

Some job sites that Pollister Drilling Corp. employees work at have confined spaces. It is the policy of Pollister Drilling Corp. that no employees will enter a confined space. If a confined space needs to be entered the employee will contact his/her immediate supervisor immediately and not proceed with that aspect of their job. The supervisor will make arrangements for properly trained persons to do any entry.

A confined space is defined as:

- ❑ Is large enough and so configured that an employee can bodily enter and perform assigned task.
- ❑ Has limited or restricted means of entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry and egress).
- ❑ Is not designed for continuous employee occupancy.
- ❑ Contains or has the potential of containing a hazardous atmosphere.
- ❑ Contains a material that has the potential for engulfment or entrapment.
- ❑ Has a eternal configuration such that a entrant could be trapped or asphyxiated by inward converging walls or buy floor which slopes downward and tapers to a smaller cross section.
- ❑ Contains any other recognized safety or health concern.

All confined spaces at Pollister Drilling Corp. job sites will be properly identified as such. Employees who may work around confined spaces will attend a confined space awareness class.

# Bloodborne Pathogens

Pollister Drilling Corp. employees who are properly trained may administer First Aid/CPR when necessary. Administering first aid is the only anticipated exposure for Pollister Drilling Corp. employees.

Pollister Drilling Corp. will ensure that all employees with occupational exposure participate in a training awareness program.

Pollister Drilling Corp. will develop and implement a written Exposure Control Plan for all employees that it can “reasonably anticipate exposure” to infectious material. The exposure control plan will be made accessible to all employees.

## **Exposure Determinations**

1. Contaminated Sharps – any contaminated object can penetrate the skin (broken glass share steel).
2. Human Body Fluids – Blood and body fluid that is visibly contaminated with blood, seaman, vaginal secretions, cerebrospinal fluid, synovial fluid, pleural fluid, pericardial fluid, peritoneal fluid, amniotic fluid, saliva.
3. Parenteral - Human bites, cuts, abrasions.

Employees administering first aid will be required to acquire certification in first aid/CPR training and remain updated. Employees will take every precaution when administering first aid as to eliminate exposures to infectious material.

Exposure determinations will be made without regards to the use of PPE.

Under situations in which differential between body fluids is difficult or impossible, all body fluids will be considered infectious.

Employees will immediately notify their immediate supervisor in the event of a possible exposure to bodily fluids (materials). The employee will perform any first aid required and take steps necessary to assure the safety of all around.

Employees are required to wear the specified PPE when working in potentially hazardous environments.

Pollister Drilling Corp. will take every precaution to eliminate the possibility of exposure of infectious materials to employees.

If hand washing facilities are not available at job sites Pollister Drilling Corp. will provide either an antiseptic hand cleaner and paper towels or antiseptic toilettes to its employees.

All specimens of blood or potentially infectious materials will be put into a labeled, leak proof bag for handling if a bio bag is not available.

All equipment or environmental surfaces will be cleaned and decontaminated after contact with blood or other infectious materials.

Pollister Drilling Corp. will make available the Hepatitis "B" vaccine to all employees that have occupational exposures.

The Tool Pusher will maintain an accurate record for each employee with occupational exposures.

Records will contain the following:

1. Dates and contents of training.
2. Names and job titles of attendees.

Records will be maintained for a minimum of three years.

Pollister Drilling Corp. will make available all records to employees upon written request.

# LOCKOUT

The purpose of lockout is to prevent personal injury and property damage due to start-up of electrically driven machinery, electrical systems, hydraulic systems and other equipment which may under repair or maintenance is being performed.

State and federal law requires a written procedure for establishing lockout. As an employee of Pollister Drilling Corp. you will be trained and expected to follow the lockout procedure spelled out below:

- ❑ Alert all affected persons that power is being disconnected.
- ❑ Before starting repair, service or set up work on machinery or equipment the person (s) performing work shall make sure all power is disconnected (and any hazardous residual pressure removed or relieved) prior to doing such work. A padlock provided by the company shall be placed at the point of power disconnect where lockout is required by each person (s) performing work. Individual locks shall be used or an authorized employee of each crew shall be responsible for placing the lock and determining that each crewmember is clear before removing the lock (s), or a supervisor may place the lock (s) for which he/she has the only key, and assuring that all crew members are clear before removing the lock(s). Keys shall be removed from the lock(s) at the time of lockout. Before work is started on equipment or machinery a test to verify that power is disconnected will be performed.
- ❑ No one other than the person(s) placing the lock(s) for lockout shall remove the lock(s) or restore power. (Exception: A Supervisor may remove a lock and restore power after a thorough check to verify that no person(s) will be exposed to danger by energizing machinery or equipment).
- ❑ If it is necessary for maintenance or repair of machinery or equipment to be continued into the next day or shift. The lock of the original employee(s) shall be removed by those persons in the presence of the oncoming shift who will then place their lock(s) on the disconnect. All affected employees shall be notified of this.
- ❑ A machine disconnect to an electrical source by a plug in cord shall be considered in compliance if the plug is disconnected and tagged, provided that the plug is a legal disconnecting means. (Plugs are acceptable as disconnecting means only for portable motors and 110V fixed equipment).

# Fall Hazard

It is the policy of Pollister Drilling Corp. that all fall hazards can be eliminated or controlled.

Fall protection equipment shall be worn when working 6 feet or more above an established working surface (i.e. ramps, runways, and other walkways, excavations, hoist areas, holes, formwork and reinforcing steel, leading edge work, unprotected sides and edges, overhead work, roofing work, precast concrete erection, wall openings, residential construction, and other walking/working surfaces). Fall protection shall also be worn when working conditions dictate such as hazardous warnings, dangers below working surfaces, unprotected edges, and no guard rails present.

The minimum requirements for fall protection shall be a full body harness, shock absorber, double locking snap hooks, and lanyard attached to a stationary support. Other fall protection systems (i.e. inertia reel, a cable grabbing device, guardrail systems, safety net systems, positioning device systems, and warning line systems) are available and may be used with appropriate approval. All components of a fall protection system shall meet the latest revision of ANSI A10.14.

For situations where it is necessary to unhook to change locations, secondary safety line equipment shall be provided to individuals climbing or working above the working surface to insure they are properly protected from falls at all times.

Supervisors will assess the work area to determine if the walking or working surfaces on which employees are to work have strength and structural integrity to safely support workers. Employees are not permitted to work on those surfaces until it has been determined that the surfaces have the requisite strength and structure integrity to support the employees. Once management determines that the surface is safe to work on the site supervisor will determine the type of fall protection needed.

Pollister Drilling Corp. will train employees on how to identify fall hazards, how to properly wear required fall protection, and how to inspect equipment to be worn or used if there job requires.

# Electrical Safety

## Electrical Safe Work Practices:

All electrical work will be done in accordance with the latest codes, standards, and regulations including, but not limited to NEC, OSHA, subpart S, and the National Electrical Safety Code (NESC, latest edition) and any State/Local standards.

Hazardous electrical maintenance will only be done by qualified (according to OSHA regulations) electricians using Proper Protective Equipment. All personal protective equipment shall meet OSHA standard 1910.137 (electrical protective equipment).

All power lines shall be considered energized unless proper measures have been taken to de-energized. When work is performed near energized overhead power lines, equipment shall not be permitted within 10 feet of power lines rated 50 KV or below. For energized lines rated above 50 KV, the minimum distance between power lines and equipment or its load should be 10 feet plus .4 inch for every 1 KV over 50 KV or twice the length of the line insulator- BUT NEVER LESS THAN 10 FEET unless the power line is de-energized.

All stored energy shall be discharged by a qualified person prior to beginning work. The qualified person must verify the equipment is de-energized and proper lockout procedures are in place prior to working on the equipment.

1. All electrical equipment shall be properly grounded and/or bonded.
2. Treat all electrical equipment as if it were energized.
3. Check the insulation and electrical cords of portable electrical tools before placing them into service. Use GFI .
4. De-Energize electrical circuits before work begins.
5. Do not contribute overloading circuits.
6. Use proper tools. Hard hats and ladders must be nonconductive.
7. Do not wear rings and loose jewelry.
8. Avoid working on electrical circuits or equipment while clothing or shoes are wet, or while hands or feet are in water.
9. When operating a disconnect standoff to one side.

# Housekeeping

Good housekeeping is the most visible evidence of Pollister Drilling Corp. management and employee concern and commitment to health and safety of its employees and community. Orderliness in the work place contributes to a safe working environment by minimizing obstacles and potential safety hazards threats such as spills, trip hazards etc.

- ❑ All job sites/areas shall be kept clean and orderly, free of clutter and trash, so work may proceed in a safe and orderly manner.
- ❑ Combustible materials, such as used rags, waste, and shavings shall be kept in approved containers.
- ❑ Floors and platforms should be kept free of oil, grease, and water. Where the type of operation produces slippery conditions, approved methods shall be used to reduce the hazards.
- ❑ Stairways, aisles, permeate roadways, walkways, and material storage areas in yards shall be kept clear and free of obstructions and tripping hazards. If the material cannot be cleared, the hazard shall be clearly identified.
- ❑ Materials and supplies shall be stored in a orderly manner to prevent injuries.
- ❑ Washing and toilet facilities shall be maintained in a sanitary condition using approved disinfectants and cleaners.
- ❑ Smokeless tobacco, cigarettes, cigars, pipe ashes, and residue shall be disposed of in appropriate containers.
- ❑ Tools should be safely placed during use and promptly put away.
- ❑ Clearly identify fire-fighting and life-saving equipment and do not block the path to this equipment.
- ❑ Keep all escape routs clear and free of any obstructions.
- ❑ Cleanliness of machinery, tools, and other equipment are important housekeeping requirements.

## **Hot Work**



The following procedures should be adhered to at a minimum when hot work is to be done.  
(Cutting, Welding)

1. Make sure all appropriate personnel are aware of the hot work plans.
2. PPE needs to be worn such as proper type of eyewear( helmet, hand shield, goggles, spectacles, the proper tinted devices need to be determined by what type of cutting or welding is done) protective clothing (welding gloves, spats if needed, flame retardant coveralls).
3. The supervisor or a person appointed by the supervisor shall inspect the work area for flammable materials.
4. Isolate all possible fuel sources.
5. Check the atmosphere for explosive vapors.
6. Utilize a fire watch while the hot work is being done. Maintain a fire watch for at least ten minutes after the work is done.
7. The fire watch shall have a fire extinguisher readily available and shall have been trained in its use. This person is also responsible to see that it is in good working order before and after the watch. (Inspect the Extinguisher).
8. Double check the area before it is left to make sure no sources remain.

If a break or lunch is taken during the hot work, the above procedure must be repeated and ensured before hot work resumes.

## **Contractor Safety**

Contractors are used by Pollister Drilling Corp. to do jobs as contracted. When on job sites or under contract to Pollister Drilling Corp. all contractors will be required to abide by the following;

- Provide upon request a copy of the companies written safety policies and procedures that are applicable for the type of work to be preformed.
- Provide upon request documentation of employee safety training pertaining to applicable duties of work to be preformed.
- Co Pollister Drilling Corp.
- Contractors are required to do tailgate safety meetings.
- Contractors are required to develop Emergency Action Plans applicable to job sites that they are working on and make sure their employees are aware of these plans.
- Contractors are responsible for developing and training their employees in procedures adequate to ensure safe operations.
- Contractors are fully responsible for providing their employees with all necessary protective and safety equipment and training in its proper use.
- Contractors must have a plan to document and correct all near-miss incidents. This plan is to include reporting of these incidents by their employees.
- Contractors must abide by all applicable laws and regulations including federal and state MIOSHA, OSHA standards.

Contractors must assure that all machinery and equipment they furnish is in safe running order, inspected regularly, and maintained properly.

## **DISCIPLINARY POLICY**

Pollister Drilling Corp. believes that all of its employees should take pride in their jobs and desire to perform them in a safe, efficient, and effective manner. The company's policy of disciplinary action sets forth the rules of conduct as currently established by the company. All employees are responsible for knowing, understanding, and abiding by these rules:

- As a condition of employment, all Pollister Drilling Corp. employees are required to participate actively in company safety programs and to follow safety regulations in the interest of on the job accident prevention.
- Willful disregard of safety practices, company rules, instructions, or the welfare of fellow employees has no place at this company. This kind of behavior may lead to injuries, damage to products or equipment and damaged relations with customers.
- Pollister Drilling Corp. considers safety to be an important aspect of job performance issues, an employee's failure to adhere to the company's safety policies or engaging in conduct, which is contrary to workplace, employee, public, or customer safety may subject an employee to disciplinary action up to and including immediate termination. Additionally, at the company's discretion, an employee may be directed to obtain safety training or retraining, as the company deems necessary.

## **Substance Abuse Policy**

Pollister Drilling Corp. recognizes that substance abuse such as alcohol and drugs are used by individuals, sometimes too the extent that their abilities and senses are impaired. Our policy

regarding substance abuse is the same if it were alcohol, illegal drugs, unreported prescription drugs, or a controlled substance.

This policy is implemented because Pollister Drilling Corp. believes that the impairment of any Pollister Drilling Corp. employee, due to his or her substance uses, is likely to result in the risk of injury to his or her and other employees or to a third party such as costumers or company guests.

“Impairment” or “being inpaired” means that an employee’s normal physical or mental abilities, of faculties, while at work have been detrimentally affected by use of substances  
Pollister Drilling Corp. will do testing for substances defined above as follows:

1. Pre-employment.
2. Post accident per DOT if applicable.
3. Random basis per DOT if applicable.
4. Reasonable cause which is defined as:  
Company belief that substance abuse exists (such as evidence of substances, accidents, injuries on the job, fights or other behavioral symptoms, negative performances, excessive absenteeism or tardiness).

Employees who test positive may be subject to discipline up to and including termination.

Pollister Drilling Corp. will adhere to Federal Confidentiality Laws and Regulations as noted in 42 CFR, Part II.

The employee who begins work while impaired or who becomes impaired while at work has violated a Company rule and is subject to disciplinary action up to and including discharge. Likewise the use, possession, transfer, or sale of any substance on company premises including company vehicles or in any Pollister Drilling Corp. parking lot, storage area, or job site is prohibited. Further, premises of customers shall be deemed as if they were company premises with the same rule violation and disciplinary action.

Employees who are taking a prescription drugs are required to report this to their supervisor. This is for the protection of the employee and for safety purposes in case of an adverse reaction to the drug while at work, so the employee is not falsely accused of taking illegal substances. Pollister Drilling Corp. will check employee lockers on company property and company vehicles if there is a suspicion of drug or alcohol being present.

When an employee is involved in the use, possession, transfer, or sale of a substance in violation of this policy, Pollister Drilling Corp. may notify appropriate authorities. Such notice will be given only after such an incident has been investigated and reviewed by the employee’s supervisor and management.

Pollister Drilling Corp. will assist an employee who requests help with substance abuse, if the employee asks for help. The company will not require it. Should disciplinary action be pending against an employee who asks for help, Pollister Drilling Corp. will assist, assuming that the

employee remains employed; nonetheless, regular disciplinary action will proceed. If the employee is terminated, Pollister Drilling Corp. will not continue any program. Voluntary, successful participation in a recovery or rehabilitative program by an employee may be a mitigating factor in any disciplinary action depending on the facts and circumstances of each individual case. In some cases disciplinary action may be suspended, or the employee placed on probation, pending successful completion of recovery program.

## **Company FLEET POLICY**

Pollister Drilling Corp. recognizes that employees are our most valuable asset and a key to our success. We recognize that almost half of all occupational fatalities involve traffic accidents. Thus, it is important to lie out guidelines and expectations for our employees who drive company vehicles. This is done to support employee safety, public safety and our continued success as a business.

Following are the guidelines you are to follow when using Pollister Drilling Corp. vehicles:

- Use of a company vehicle is limited to the employee. If driven home, a spouse may drive for short, occasional trips to the store, etc. Use by any other person must be approved by Management and will require a motor vehicle records check provided to Management by the primary driver.
- In order to assure adequate driving experience no one under the age of 22 will be given permission to drive company vehicles.
- Your driving record will be checked at time of hire, and following any “chargeable accident”. Any serious driving offense (e.g. reckless driving, DUIL, etc.) even in your personal vehicle may lead to eliminating your driving privileges. Pollister Drilling Corp. will take action on any driver who has more than 5 points assessed in the most recent 3 year period.
- Any driver who receives a ticket involving moving violations (even in their personal vehicle) must inform Management within 48 hours.
- Driving a company vehicle is a privilege. The vehicle, as with any company property, is not to be abused. The vehicle should not be overloaded or operated in an unsafe manner. Trash should not be left in the vehicle.
- All accidents involving the company vehicle are to be reported to Management within 24 hours.
- Needless to say, State traffic laws are to be followed when operating your company vehicle. **Seat belts are to be worn by every person in the vehicle. There is to be no driving if you are under the influence of alcohol or drugs.** In this regard, State Laws are Company policy and any violation will lead to discipline up to and including termination.
- Driving requires your undivided attention. Drivers should plan accordingly. Cell phones may be used, but numbers should be stored in memory, or dialed prior to driving. Maps and instructions should be reviewed while parked.
- Drivers must conduct a 360-degree walk-around before getting into their vehicle.
- Drivers must do a tire maintenance check, which includes ensuring tires have proper tread depth and properly inflated.

#### **Safety and emergency equipment**

The following safety and emergency devices are required as minimum equipment to be carried in Company vehicles and maintained in an operable condition at all times. Supervisors may increase equipment such equipment in accordance with driver and equipment exposure, such as tire chains, hydraulic jacks, and flashlights.

- Autos – 1-First Aid Kit and 1-2 ¾ LB ABC Fire Extinguisher.
  - P/U Trucks – 1-First Aid Kit. And 1-6LB BC Fire Extinguisher.
- Personal Use: Pollister Drilling Corp. allows you to operate your assigned company vehicle for personal use provided:
    1. Only you or your spouse drives the car and you are both licensed in the state where you live.

2. If your spouse chooses to operate the company vehicle, a current MVR must be provided.
3. You don't use the vehicle to tow trailers of any kind or to carry loads with rooftop or other luggage racks.
4. You park the vehicle at home at no cost to

## **Temporary Alternative Duty Return to Work Program**

When there is a work related injury or illness and the employee is released to perform limited duty work, the employee must report to the company and present the attending physicians statements indicating the extent of restrictions and the duration of time the restrictions cover. Pollister Drilling Corp. may call the attending physician and request information to determine if they can call the employee back into the work force to do limited duties

The company will review the employee's former position and any temporary work alternative work, which might be available to determine whether the employee can be returned to work on a temporary basis.

If temporary alternative duty work is available the employee must come in to do the tasks.

If temporary alternative duty work is not available, the employee must continue to inform the company of his/her condition and the company will review what the physician's statements are. At any time during the leave the company may come up with alternate duty assignment and clear it through the attending physician and return the employee back to work.

## **Material Handling Equipment**

All material handling equipment must have roll over protection. Although forklifts are indispensable tools for moving heavy objects, their operation and proper maintenance require special precautions and training. The use of forklifts is restricted to trained personnel that have been authorized by their supervisor to operate the forklift.

1. All operators of forklifts must be trained and re-trained every 3 years.
2. All operators of forklifts must have permit to operate a forklift.
3. Inspect forklifts before and after use, checking warning and safety devices (i.e. brakes, lights, steering, seat brake, backup alarms and hydraulic operation).
4. Seat belts must be worn when operating forklifts.
5. Make sure brakes are set and the wheels are blocked on a trailer or railcar that is being loaded or unloaded to prevent movement.
6. When the forklift is not in use the forks must be resting on the ground.



7. Handle loads that the forklift is capable of lifting safely.
8. Carry loads low with the forks tilted back.
9. Do not allow any person to stand or walk under lifted loads.
10. Do not use the forklift to raise people for overhead work without an approved, load rated platform equipped with a mast protector and having the platform properly secured to the forklift.
11. Move 55 gallon barrels on pallets, a barrel rack, in a basket, or with a barrel handling extension. Barrels must not be sandwiched together between the forks.
12. Forklift must be shut off prior to exiting the equipment.

Refresher training is required whenever one of the following occurs:

- The operator is involved in an accident or near miss.
- The operator has been observed operating the equipment in an unsafe manner.
- The operator has been determined in their evaluation to need more training.
- There are changes in the work place that could affect safe operation (i.e. different types of paving, reconfigured storage racks, new layout or restricted sight).

## Hazard Assessment Form

**Instructions:** This hazard assessment form was developed to assist our organization with the hazard assessment requirements of the Personal Protective Equipment Standard.

Job Classification: \_\_\_\_\_  
 Completed By \_\_\_\_\_ Date \_\_\_\_\_

**Head Hazards:** Tasks that can cause head hazards include: Working below other workers who are using tools or materials that could fall, working on energized electrical equipment, working with chemicals, and working under machinery or processes which might cause materials or objects to fall.

**Protection needed** yes \_\_\_\_\_ no \_\_\_\_\_ **Description of hazard** \_\_\_\_\_  
 \_\_\_\_\_

**EYE Hazards:** Tasks that can cause eye hazards include: Working with chemicals, chipping, grinding, sanding, welding, flying objects, woodworking.

Protection needed yes \_\_\_\_\_ no \_\_\_\_\_ Description of hazard \_\_\_\_\_

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**Hand Hazards:** Tasks that can cause hand hazards include: cutting material, working with chemicals, working with hot items, working with cold items, working with sharp objects.

Protection needed yes \_\_\_\_\_ no \_\_\_\_\_ Description of hazard \_\_\_\_\_

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**Foot Hazards:** Tasks that can cause foot hazards include: Carrying or handling of material that could be dropped, performing manual material handling, and working with chemicals.

Protection needed yes \_\_\_\_\_ no \_\_\_\_\_ Description of hazard \_\_\_\_\_

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**Noise Hazards:** Tasks that can create noise hazards include: Grinding, running motors, running equipment, working in loud areas, metal shops, and hammering.

Protection required yes \_\_\_\_\_ no \_\_\_\_\_ Description of hazard \_\_\_\_\_

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**Dust/Fume/Mist Hazards:** Tasks that can create a dust/fume hazard include: Working in dusty areas, grinding, welding, blowdowns, spray painting, working with chemicals.

Protection required yes \_\_\_\_\_ no \_\_\_\_\_ Description of hazard \_\_\_\_\_

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## Drug and Alcohol Policy Acknowledgement

I, the undersigned employee, have received and reviewed Pollister Drilling Corp. Drug and Alcohol Policy.

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Signature

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Date

## **Company Safety Manual Acknowledgement**

I, the undersigned employee acknowledge receipt of the Pollister Drilling Corp. Safety Manual and agree to read and study it. I also agree to abide by these guidelines to the best of my ability during my employment with Pollister Drilling Corp.

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Signature

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Date

# **Crown Block, Traveling Block, Hook, Kelly and Hose**

## **Crown Block**

Crown Block assemblies should be securely bolted in place. This applies particularly to the gudgeon caps to prevent the sheaves from jumping out of the bearings and falling to the derrick floor. Crown protection devices must be properly adjusted and maintained. The drawworks should be shut down when the crown block is to be greased.

## **Traveling Block**

The sheaves of every traveling block must be guarded with suitable heavy metal nip-point guards. These guards should be designed so that they will enclose the sheaves and prevent an employee's hand from being drawn into the nip-point where the hoisting line begins contact with the sheaves. Traveling Block sheave guards must be securely fastened to the block. The drill line should be threaded through the crown block and the traveling block while the traveling block is on the derrick floor or secured to the derrick. The traveling block should be inspected and lubricated during each daylight tour.

## **Hook**

Every drilling hook should be equipped with a well-constructed and securely fastened rotary latch, which will prevent the load from becoming disengaged from the hook. Unless positive latches are used on hooks, a wire line string should be used to prevent the elevator bails from falling should they be dislodged from the hook. Safety latches on hooks must be maintained rigid so that a jar from the lavatory will not unhook them. The hook should be kept closed whenever the block is in the derrick.

### **Kelly**

The pressure rating of the Kelly cock must exceed maximum pressure expected to be encountered at any time during drilling or completion operations. The Kelly cock wrench must be readily accessible on the rig floor. It should be tested when the BOP equipment is tested. If the Kelly is racked in the derrick or mast, a platform should be provided for the employee to stand on when he racks the Kelly. The Kelly should remain in the rathole until the employee hook has been locked in the swivel to prevent the Kelly from disengaging during lifting or drilling.

### **Hose**

The pump end of the drilling hose must be securely fastened to the derrick by a cable of not less than 5/8" diameter or by a chain not less than 1/2" thick clamped to the hose and the derrick leg. The swivel end of the hose must be secured by a similar chain or cable clamped to the body, and the other end should be fastened to the body of the swivel. Do not fasten the cable or chain to the swivel gooseneck.

A continuous steel cable should be clamped to each section of all steel drilling hose sections to prevent any section from whipping. This cable must be anchored to the derrick leg and swivel.

Fittings and safety lines on the rotary hose must be inspected frequently to determine whether repairs or replacement might be required.

If high pumping pressure is required to start circulation, crew members should stay away from the rotary hose and the fluid end of the mud pumps as a safety measure against a rupture or gasket blowout.

## **Derrick, Derrick Platforms, And Accessories**

Reasonable provisions should be made to prevent standard derrick and telescoping masts from overturning because of wind velocity. The guying system should be constructed in accordance with generally recognized safe practices, manufactures specifications and Safety Standards.

Portable telescoping masts should be equipped with a safety device designed to engage automatically, and thus prevent the upper section of the mast from falling at an unsafe rate of speed should the lifting mechanism fail when the upper section is being raised or lowered.

Mud system stand pipes should be securely fastened to the derrick or mast leg, or the derrick mast girts, immediately adjacent to the structure leg, unless other equivalent support is provided.

A well constructed pipe racking support, designed primarily to prevent pipe from falling, should be provided near the top of the stand pipe. This support should be so constructed that it will, with the mast, completely enclose the pipe. Pipe racking fingers should have safety lines attached to the fingers and secured to the rack to prevent any finger from falling should it be broken.

Whenever corrugated iron or other metal, or wood is attached to the derrick for the protection of employees against adverse weather, it should be secured so that it cannot be blown or shaken off the derrick.

An auxiliary means of escape must be provided from the principal inside derrick platform of a standard-type derrick and from the pipe racking platform on a mast. Standards require that the escape lines should be free of knots, splices or other obstructions. Tension of the escape must be periodically checked and adjusted to assure safe landing of the user. Tension must be such that a person descending on the escape line may stop 20 to 25 feet from the anchor point. The ground anchor point of the escape line must be located a minimum lateral distance from the derrick or mast equal to the height above the ground where the connecting point of the escape line is secured to the derrick or mast. To facilitate escape, the ground level area of not less than 10 feet from the derrick floor shall be maintained clear of equipment and supplies not in use or not part of the drilling or servicing operations.

### **Derrick Platforms**

All derricks and portable masts must be equipped with approved fixed ladders to provide access to all work areas from the floor to the crown platform. The derrickman must be able to ascend and descend onto solid flooring on the platform before detaching the climber's safety belt and putting on the derrick working safety belt.

Platforms must be provided on masts for employees to stand on while they handle pipe or other equipment racked in or on the mast. These platforms must completely cover the space between the working edges and the main structure member to which they are secured. A platform must be provided completely across each outer side of the mast adjacent to, and level with the ends of the pipe racking support. The outer edges of these platforms must be equipped with railings and toe boards. A platform must be provided inside the derrick at each elevation where an employee is normally required to handle pipe or other equipment which is racked in the derrick. The

working edge of the inside derrick platforms must be placed with sufficient clearance for reasonably safe passageway of the traveling block, in such a manner that it will permit the employee working on the platform to reach the elevator safely.

The stabbing board must be at least two inches thick and ten inches wide and strong enough to support a much heavier load than the weight of the stabber. Temporary working platforms, such as stabbing boards or swabbing boards must be fastened securely to the derrick at both ends and removed immediately following use. Inside derrick platforms (stabbing board excepted) must completely cover the space from the working edge back to the derrick with bolts or equivalent fastening to resist being shifted or accidentally dislodged while operating. The outer edges of the derrick crown platforms must be equipped with standard railings and toe boards.

### **Derrick Safety Rules**

- An employee qualified in procedures for raising and lowering the mast must be in charge of raising and lowering operations and must do both of the following: visually inspect the raising or lowering mechanism, and assure that all tools and materials not secured are removed from the mast.
- Before imposing any load on a derrick or mast, all required load guys must be properly tightened.
- Mast crown sheaves must be guarded to prevent the hoisting line from being displaced from the grooves during all operations.
- Employees on the floor should avoid being under others working in the derrick.
- Derrick safety belts must be adjusted to the wearer and fit snugly and comfortably.
- The lifeline must be securely fastened to some part of the derrick in a way that will allow the worker to move as required, but have no excess slack. Lifelines should not be fastened to the same girt as the monkey board snubbing line.
- The lifeline worn by the stabber must be attached to the first girt above the stabbing board. As an alternate method, a soft rope equipped with metal rings to which the safety line is attached may be strung across the derrick with each end secured to the sides of the derrick.
- Derrick belts and lifelines must be maintained in good condition. They must be carefully inspected at regular intervals. Damaged belts or belts subjected to in-service shock must be replaced immediately.
- Working platforms above the derrick floor must be inspected to see that there are no loose tools, boards, or other equipment on them before any work is done from the platforms. They should be inspected after each stay on the platform.
- To avoid possible injury to the hand by grabbing the fast line, the derrickman should be careful to grasp only the deadline if he has to push the traveling block away from the working platform.
- If a pipe hook is used, it should be secured to some part of the derrick with 1/4inch wire line or a material of equal strength.
- If the derrickman sees a situation developing that might result in an accident, he should immediately give alarm to persons below.

- To eliminate slipping hazards, drilling rig floors must be kept free of mud and oil as is practical. Better footing is provided if the floor is washed while the next stand of pipe is being picked up. Nonskid materials are provided in some areas to prevent slipping.
- All counterweights above drilling rig floor, when not fully encased or running in permanent guides, shall have a safety chain or wire rope safety line anchored to the derrick or mast to secure them. The chain or wire rope shall be capable of sustaining the drop load and shall limit the drop of the counterweight to not less than seven feet from the floor.
- An unguarded opening big enough to permit a person to fall through shall not exist between the beams or main supports of the crown block.
- Chain hoists and snatch blocks must not be fastened to girts because any bending of girts weakens the derrick.
- All bolts and derrick members in bolted and substructures must be inspected and bolts tightened after each move.
- Do not weld on the derrick legs without approval of the derrick manufacturer.
- Loose boards and materials not in use should be removed from the derrick floor. Nails should be pulled out as the boards are taken up. Broken floor boards should be removed and replaced immediately. All new boards should be flush with the floor floorboards already in place.
- Steps and guardrails on the derrick floor should be maintained in good condition. If it is necessary to remove them temporarily during the installation of machinery, they should be replaced with out delay.
- Pipe left standing in the derrick must be made secure so that it will not shift and cause an unnecessary strain on the derrick.

### **Weight Indicator**

A weight indicator must be provided and used on every rig. It must be so constructed, installed and maintained that it will accurately indicate the weight of the load suspended from the hoisting lines.

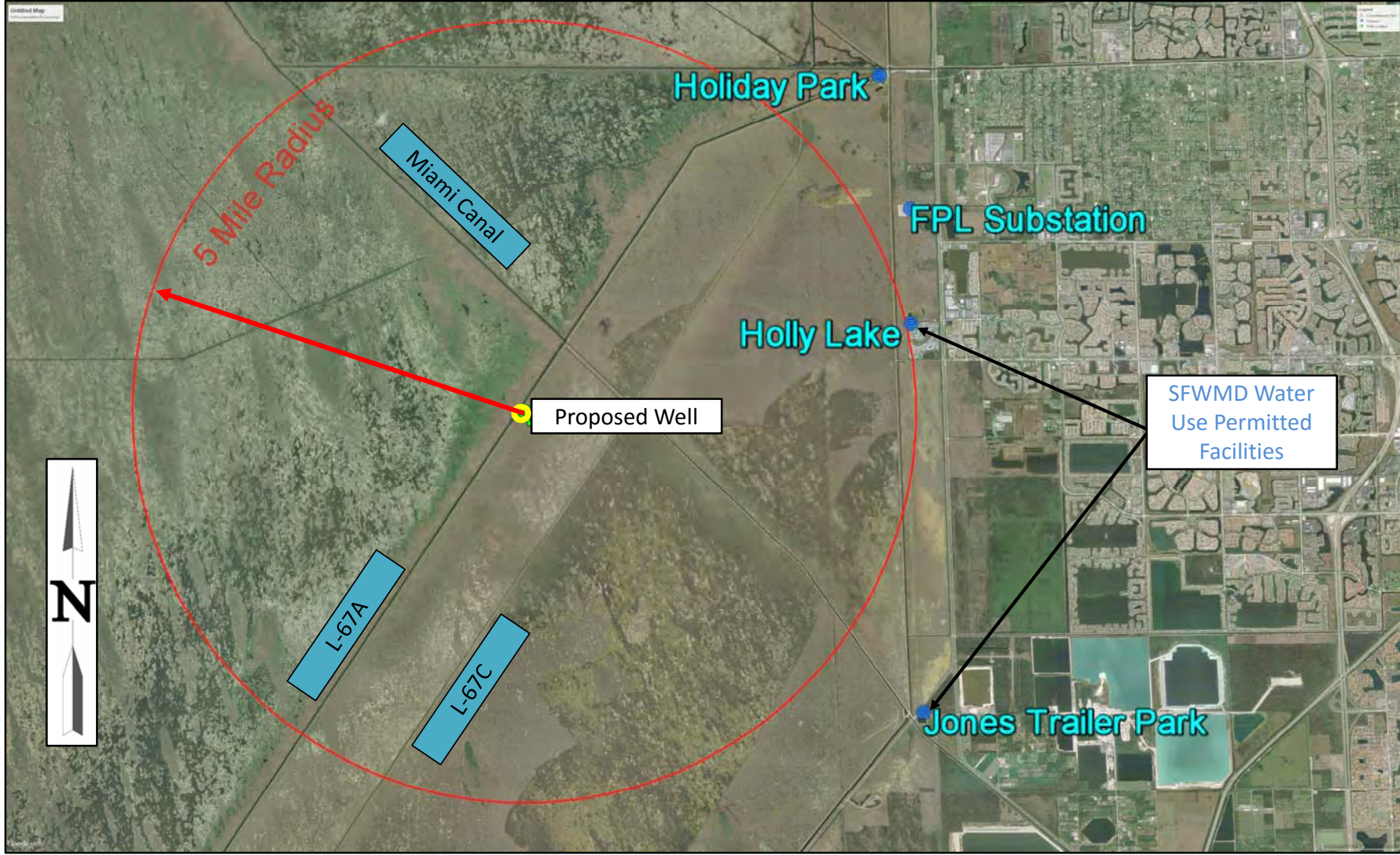
### **Jacks**

Make sure the footings for the jacks are substantial. If necessary, boards or blocks underneath should be used. Jacks should be placed so that nothing will be in the way when operating their handles. A jack should never be left standing under a load with its handle in the socket. Never rely on jacks alone to support a load which employees must work under, substantial blocking should be used as well. Leveling jacks must have a safety l





6.5 Plat identifying the nearest drinking water wells to the proposed well site



**THE CAROL GROUP, INC**

*Professional Engineers and Surveyors*

**208 Dal Hall Boulevard  
Lake Placid, FL 33852**

**Kanter 23-2  
SFWMD WU Facilities  
Broward County, FL**

DATE:	PROJECT NO.
	FILE NO.
	SCALE

SHEET NUMBER

**6.5**

6.7 Materials Safety Data Sheets for all potentially toxic or hazardous materials to be stored on site

## SAFETY DATA SHEET

## AMSOIL Propylene Glycol Antifreeze/Coolant



**Date** : 02/15/2015  
**Version** : 5

## Section 1. Identification

**GHS product identifier** : AMSOIL Propylene Glycol Antifreeze/Coolant  
**Code** : ANT  
**Product type** : Liquid.

### Identified uses

Antifreeze.

**Supplier's details** : AMSOIL INC.  
 One AMSOIL Center  
 Superior, WI 54880  
 715-392-7101

**Emergency telephone number (with hours of operation)** : CHEMTREC: Within USA and Canada: 1-800-424-9300  
 Outside USA and Canada: +1 703-741-5970 (collect calls accepted)  
 (24/7)

## Section 2. Hazards identification

**OSHA/HCS status** : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

**Classification of the substance or mixture** : Not classified.

### GHS label elements

**Signal word** : No signal word.

**Hazard statements** : No known significant effects or critical hazards.

### Precautionary statements

**Prevention** : Not applicable.

**Response** : Not applicable.

**Storage** : Not applicable.

**Disposal** : Not applicable.

**Hazards not otherwise classified** : None known.

---

## Section 3. Composition/information on ingredients

---

**Substance/mixture** : Mixture  
**Other means of identification** : Not available.

### CAS number/other identifiers

**CAS number** : Not applicable.  
**Product code** : ANT

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

---

## Section 4. First aid measures

---

### Description of necessary first aid measures

**Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

**Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur.

**Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

**Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

**Eye contact** : No known significant effects or critical hazards.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : No known significant effects or critical hazards.  
**Ingestion** : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

**Eye contact** : No known significant effects or critical hazards.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : No known significant effects or critical hazards.  
**Ingestion** : No known significant effects or critical hazards.

### Indication of immediate medical attention and special treatment needed, if necessary

**Notes to physician** : Treat symptomatically.

- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No special protection is required.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None known.

**Specific hazards arising from the chemical** : No specific fire or explosion hazard.

- Hazardous thermal decomposition products** : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide

**Special protective actions for fire-fighters** : No special protection is required.

**Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : Put on appropriate personal protective equipment.
- For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

**Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

- Spill** : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

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## Section 7. Handling and storage

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### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8). Avoid contact with used product. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

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## Section 8. Exposure controls/personal protection

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### Control parameters

#### Occupational exposure limits

- Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

### Individual protection measures

- Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.
- Skin protection**
- Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
- Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.
- Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.



**Respiratory protection** : Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

## Section 9. Physical and chemical properties

---

### Appearance

**Physical state** : Liquid. [Transparent.]  
**Color** : Yellow.  
**Odor** : Sweet.  
**Odor threshold** : Not available.  
**pH** : 8 to 8.6  
**Melting point / Pour point** : -32.222°C (-26°F)  
**Boiling point** : 107.78°C (226°F)  
**Flash point** : Closed cup: 99°C (210.2°F) [Pensky-Martens.]  
**Evaporation rate** : Not available.  
**Flammability (solid, gas)** : Not available.  
**Lower and upper explosive (flammable) limits** : Not available.  
**Vapor pressure** : Not available.  
**Vapor density** : Not available.  
**Relative density** : 1.02 to 1.06  
**Solubility** : Miscible in water.  
**Partition coefficient: n-octanol/water** : Not available.  
**Auto-ignition temperature** : Not available.  
**Decomposition temperature** : Not available.  
**Viscosity** : Not available.

## Section 10. Stability and reactivity

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**Reactivity** : No specific test data related to reactivity available for this product or its ingredients.

**Chemical stability** : The product is stable.

**Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

**Conditions to avoid** : No specific data.

**Incompatible materials** : Reactive or incompatible with the following materials: oxidizing materials and acids.

**Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

There is no data available.

#### Irritation/Corrosion

There is no data available.

#### Sensitization

There is no data available.

#### Carcinogenicity

There is no data available.

#### Specific target organ toxicity (single exposure)

There is no data available.

#### Specific target organ toxicity (repeated exposure)

There is no data available.

#### Aspiration hazard

There is no data available.

**Information on the likely routes of exposure** : Dermal contact. Eye contact. Inhalation. Ingestion.

### Potential acute health effects

**Eye contact** : No known significant effects or critical hazards.

**Inhalation** : No known significant effects or critical hazards.

**Skin contact** : No known significant effects or critical hazards.

**Ingestion** : No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : No known significant effects or critical hazards.

**Inhalation** : No known significant effects or critical hazards.

**Skin contact** : No known significant effects or critical hazards.

**Ingestion** : No known significant effects or critical hazards.

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

**Potential immediate effects** : No known significant effects or critical hazards.

**Potential delayed effects** : No known significant effects or critical hazards.

#### Long term exposure

**Potential immediate effects** : No known significant effects or critical hazards.

**Potential delayed effects** : No known significant effects or critical hazards.

**Potential chronic health effects**

**General** : No known significant effects or critical hazards.

**Carcinogenicity** : No known significant effects or critical hazards.

**Mutagenicity** : No known significant effects or critical hazards.

**Teratogenicity** : No known significant effects or critical hazards.

**Developmental effects** : No known significant effects or critical hazards.

**Fertility effects** : No known significant effects or critical hazards.

**Numerical measures of toxicity**

**Acute toxicity estimates**

There is no data available.

## Section 12. Ecological information

**Toxicity**

There is no data available.

**Persistence and degradability**

**Bioaccumulative potential**

There is no data available.

**Mobility in soil**

**Soil/water partition coefficient ( $K_{oc}$ )** : There is no data available.

**Other adverse effects** : No known significant effects or critical hazards.

## Section 13. Disposal considerations

**Disposal methods** : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.
Additional information	-	-	-

**AERG** : Not applicable.

**Special precautions for user** : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** : Not available.

## Section 15. Regulatory information

**U.S. Federal regulations** : **United States inventory (TSCA 8b):** All components are listed or exempted.

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Not listed

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

**SARA 302/304**

No products were found.

**SARA 304 RQ** : Not applicable.

**SARA 311/312**

**Classification** : Not applicable.

**State regulations**

**Massachusetts** : None of the components are listed.

**New York** : None of the components are listed.

**New Jersey** : The following components are listed: Propane-1,2-diol

**Pennsylvania** : The following components are listed: Propane-1,2-diol

**California Prop. 65**

No products were found.

**International regulations**

**Chemical Weapon Convention List Schedules I, II & III Chemicals**

Ingredient name	List name	Status
Not listed.		

**Montreal Protocol (Annexes A, B, C, E)**

Ingredient name	List name	Status
Not listed.		

**Stockholm Convention on Persistent Organic Pollutants**

Ingredient name	List name	Status
Not listed.		

**Rotterdam Convention on Prior Inform Consent (PIC)**

Ingredient name	List name	Status
Not listed.		

**UNECE Aarhus Protocol on POPs and Heavy Metals**

Ingredient name	List name	Status
Not listed.		

## Section 16. Other information

**History**

**Date of issue mm/dd/yyyy** : 02/15/2015

**Date of previous issue** : 09/15/2013

**Version** : 5

**Prepared by** : AMSOIL INC.

**Notice to reader**

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein.

Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

# MATERIAL SAFETY DATA SHEET

## COTTON SEED HULLS

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**TRADE NAME:** COTTON SEED HULLS

**CHEMICAL CLASS:** Cellulose material

**APPLICATIONS:** Oil well drilling fluid additive. Lost circulation material.

**EMERGENCY TELEPHONE:** 281-561-1600

**SUPPLIER:** Supplied by a Business Unit of  
M-I L.L.C.  
P.O. Box 42842, Houston, Texas 77242-2842  
See cover sheet for local supplier.

**TELEPHONE:** 281-561-1509

**FAX:** 281-561-7240

**CONTACT PERSON:** Sam Hoskin - Manager, Occupational Health

### 2. COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT NAME:	CAS No.:	CONTENTS :	EPA RQ:	TPQ:
Cotton dust (raw)		0-1 %		
Particulates Not Otherwise Classifi- ed (PNOC)		99-100 %		

### 3. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW:

CAUTION! MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION. Avoid contact with eyes, skin and clothing. Avoid breathing airborne product. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

This product is a/an This product is a powder. May form explosive dust-air mixtures. Slippery when wet. A nuisance dust.

#### ACUTE EFFECTS:

#### HEALTH HAZARDS, GENERAL:

Particulates may cause mechanical irritation to the eyes, nose, throat and lungs. Particulate inhalation may lead to pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma. Dermatitis and asthma may result from short contact periods.

**INHALATION:** May be irritating to the respiratory tract if inhaled.

**INGESTION:** May cause gastric distress, nausea and vomiting if ingested.

**SKIN:** May be irritating to the skin.

**EYES:** May be irritating to the eyes.

**CHRONIC EFFECTS:  
SENSITIZATION:**

Chronic exposure may cause an allergic response due to allergens or fungi on the dust.

**CARCINOGENICITY:**

IARC: Not listed. OSHA: Not regulated. NTP: Not listed.

**ROUTE OF ENTRY:**

Inhalation. Skin and/or eye contact.

**TARGET ORGANS:**

Respiratory system, lungs. Skin. Eyes.

---

#### 4. FIRST AID MEASURES

**GENERAL:** Persons seeking medical attention should carry a copy of this MSDS with them.

**INHALATION:** Move the exposed person to fresh air at once. Perform artificial respiration if breathing has stopped. Get medical attention.

**INGESTION:** Drink a couple of glasses water or milk. Do not give victim anything to drink if he is unconscious. Get medical attention.

**SKIN:** Wash skin thoroughly with soap and water. Remove contaminated clothing. Get medical attention if any discomfort continues.

**EYES:** Promptly wash eyes with lots of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

---

#### 5. FIRE FIGHTING MEASURES

**AUTO IGNITION TEMP. (°F):** N/D  
**FLAMMABILITY LIMIT - LOWER(%):** N/D  
**FLAMMABILITY LIMIT - UPPER(%):** N/D

**EXTINGUISHING MEDIA:**  
Foam. Water spray, fog or mist.

**SPECIAL FIRE FIGHTING PROCEDURES:**  
No specific fire fighting procedure given.

**UNUSUAL FIRE & EXPLOSION HAZARDS:**  
Dust in high concentrations may form explosive mixtures with air.

**HAZARDOUS COMBUSTION PRODUCTS:**  
Irritating gases/vapors/fumes. Oxides of: Carbon.

---

#### 6. ACCIDENTAL RELEASE MEASURES

**PERSONAL PRECAUTIONS:**  
Wear proper personal protective equipment (see MSDS Section 8).

**SPILL CLEAN-UP PROCEDURES:**  
Avoid generating and spreading of dust. Shovel into dry containers. Cover and move the containers. Flush the area with water. Do not contaminate drainage or waterways. Repackage or recycle if possible.

## 7. HANDLING AND STORAGE

### HANDLING PRECAUTIONS:

Avoid handling causing generation of dust. Wear full protective clothing for prolonged exposure and/or high concentrations. Eye wash and emergency shower must be available at the work place. Wash hands often and change clothing when needed. Provide good ventilation. Mechanical ventilation or local exhaust ventilation is required.

### STORAGE PRECAUTIONS:

Store at moderate temperatures in dry, well ventilated area. Keep in original container.

## 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

INGREDIENT NAME:	CAS No.:	OSHA PEL:		ACGIH TLV:		OTHER:		UNITS:
		TWA:	STEL:	TWA:	STEL:	TWA:	STEL:	
Cotton dust (raw)		1		0.2				mg/m <sup>3</sup>

### PROTECTIVE EQUIPMENT:



### ENGINEERING CONTROLS:

Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to reduce air contamination and keep worker exposure below the applicable limits.

**VENTILATION:** Supply natural or mechanical ventilation adequate to exhaust airborne product and keep exposures below the applicable limits.

**RESPIRATORS:** Use at least a NIOSH-approved N95 half-mask disposable or reuseable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or reuseable particulate respirator.

### PROTECTIVE GLOVES:

Use suitable protective gloves if risk of skin contact.

### EYE PROTECTION:

Wear dust resistant safety goggles where there is danger of eye contact.

### PROTECTIVE CLOTHING:

Wear appropriate clothing to prevent repeated or prolonged skin contact.

### HYGIENIC WORK PRACTICES:

Wash promptly with soap and water if skin becomes contaminated. Change work clothing daily if there is any possibility of contamination.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE/PHYSICAL STATE:	Powder, dust.	
COLOR:	Brown.	
ODOR:	Odorless or no characteristic odor.	
SOLUBILITY DESCRIPTION:	Insoluble in water.	
DENSITY/SPECIFIC GRAVITY (g/ml):	0.24	TEMPERATURE (°F): 68
BULK DENSITY:	15 lb/ft <sup>3</sup> ; 237 kg/m <sup>3</sup>	
VAPOR DENSITY (air=1):	N/A	
VAPOR PRESSURE:	N/A	TEMPERATURE (°F):



## 10. STABILITY AND REACTIVITY

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**STABILITY:** Normally stable.

**CONDITIONS TO AVOID:**  
Avoid heat.

**HAZARDOUS POLYMERIZATION:**  
Will not polymerize.

**POLYMERIZATION DESCRIPTION:**  
Not relevant.

**MATERIALS TO AVOID:**  
Strong oxidizing agents.

**HAZARDOUS DECOMPOSITION PRODUCTS:**  
No specific hazardous decomposition products noted.

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## 11. TOXICOLOGICAL INFORMATION

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**TOXICOLOGICAL INFORMATION:**  
No toxicological data is available for this product.

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## 12. ECOLOGICAL INFORMATION

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**ECOLOGICAL INFORMATION:**  
Contact M-I Environmental Affairs for ecological information.

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## 13. DISPOSAL CONSIDERATIONS

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**WASTE MANAGEMENT:**  
This product does not meet the criteria of a hazardous waste if discarded in its purchased form. Under RCRA, it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixtures, processes, etc, may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.

**DISPOSAL METHODS:**  
Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that containers are empty by RCRA criteria prior to disposal in a permitted industrial landfill.

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## 14. TRANSPORT INFORMATION

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**PRODUCT RQ:** N/A

**U.S. DOT:**  
**U.S. DOT CLASS:** Not regulated.

**CANADIAN TRANSPORT:**  
**TDGR CLASS:** Not regulated.

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SEA TRANSPORT:  
IMDG CLASS: Not regulated.

AIR TRANSPORT:  
ICAO CLASS: Not regulated.

15. REGULATORY INFORMATION

REGULATORY STATUS OF INGREDIENTS: NAME:	CAS No:	TSCA:	CERCLA:	SARA 302:	SARA 313:	DSL(CAN):
Cotton dust (raw)		N/A	No	No	No	N/A
Particulates Not Otherwise Classi- fied (PNOC)		N/A	N/A	N/A	N/A	N/A

US FEDERAL REGULATIONS:  
WASTE CLASSIFICATION: Not a hazardous waste by U.S. RCRA criteria. See Section 13.

REGULATORY STATUS: This Product or its components, if a mixture, is subject to following regulations (Not meant to be all inclusive - selected regulations represented):

SECTION 313: This product does not contain toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR Part 372.

- SARA 311 Categories:
- 1: Immediate (Acute) Health Effects.
  2. Delayed (Chronic) Health Effects.

The components of this product are listed on or are exempt from the following international chemical registries:

- TSCA (U.S.)
- DSL (Canada)

STATE REGULATIONS:  
STATE REGULATORY STATUS: This product or its components, if a mixture, is subject to following regulations (Not meant to be all inclusive - selected regulations represented):  
Illinois Right-to-Know.  
Pennsylvania Right-to-Know.

PROPOSITION 65: This product does not contain chemicals considered by the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 as causing cancer or reproductive toxicity, and for which warnings are now required.

CANADIAN REGULATIONS:  
REGULATORY STATUS: This Material Safety Data Sheet has been prepared in compliance with the Controlled Product Regulations.

Canadian WHMIS Classification: Not a Controlled Product.

16. OTHER INFORMATION

NPCA HMIS HAZARD INDEX: \* 1 Slight Hazard  
FLAMMABILITY: 1 Slight Hazard  
REACTIVITY: 0 Minimal Hazard

**NPCA HMIS PERS. PROTECT. INDEX:** E - Safety Glasses, Gloves, Dust Respirator

**USER NOTES:** N/A = Not applicable N/D = Not determined

**INFORMATION SOURCES:** OSHA Permissible Exposure Limits, 29 CFR 1910, Subpart Z, Section 1910.1000, Air Contaminants.

ACGIH Threshold Limit Values and Biological Exposure Indices for Chemical Substances and Physical Agents (latest edition).

Sax's Dangerous Properties of Industrial Materials, 9th ed., Lewis, R.J. Sr., (ed.), VNR, New York, New York, (1997).

**PREPARED BY:** Sam Hoskin/bb

**REVISION No./Repl. MSDS of:** 1 / March 1993

**MSDS STATUS:** Approved.

**DATE:** January 4, 1999

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**DISCLAIMER:**

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

# MATERIAL SAFETY DATA SHEET

## DRILLING PAPER

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

TRADE NAME: DRILLING PAPER

OTHER NAME: Ground / shredded paper

APPLICATIONS: Oil well drilling fluid additive. Lost circulation material

EMERGENCY TELEPHONE: 281-561-1600

SUPPLIER: Supplied by a Business Unit of  
M-I L.L.C.  
P.O. Box 42842, Houston, Texas 77242-2842  
See cover sheet for local supplier.

TELEPHONE: 281-561-1509

FAX: 281-561-7240

CONTACT PERSON: Sam Hoskin - Manager, Occupational Health

### 2. COMPOSITION, INFORMATION ON INGREDIENTS

INGREDIENT NAME: Particulates Not Otherwise Classifi- ed (PNOC)	CAS No.:	CONTENTS :	EPA RQ:	TPQ:
		100 %		

### 3. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW:

CAUTION! MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION. Avoid contact with eyes, skin and clothing. Avoid breathing airborne product. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

This product is a/an Off-white fibrous material. May form explosive dust-air mixtures. Slippery when wet.

#### ACUTE EFFECTS:

#### HEALTH HAZARDS, GENERAL:

Particulates may cause mechanical irritation to the eyes, nose, throat and lungs. Particulate inhalation may lead to *pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma*. Dermatitis and asthma may result from short contact periods.

INHALATION: May be irritating to the respiratory tract if inhaled.

INGESTION: May cause gastric distress, nausea and vomiting if ingested.

SKIN: May be irritating to the skin.

EYES: May be irritating to the eyes.

CHRONIC EFFECTS:

10114 - DRILLING PAPER

---

**CARCINOGENICITY:**

IARC: Not listed. OSHA: Not regulated. NTP: Not listed.

**ROUTE OF ENTRY:**

Inhalation. Skin and/or eye contact.

**TARGET ORGANS:**

Respiratory system, lungs. Skin. Eyes.

---

**4. FIRST AID MEASURES**

---

**GENERAL:**

Persons seeking medical attention should carry a copy of this MSDS with them.

**INHALATION:**

Move the exposed person to fresh air at once. Perform artificial respiration if breathing has stopped. Get medical attention.

**INGESTION:**

Drink a couple of glasses water or milk. Do not give victim anything to drink if he is unconscious. Get medical attention.

**SKIN:**

Wash skin thoroughly with soap and water. Remove contaminated clothing. Get medical attention if any discomfort continues.

**EYES:**

Promptly wash eyes with lots of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

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**5. FIRE FIGHTING MEASURES**

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**FLAMMABILITY LIMIT - LOWER(%):** N/D

**FLAMMABILITY LIMIT - UPPER(%):** N/D

**EXTINGUISHING MEDIA:**

Carbon dioxide (CO2). Dry chemicals. Foam. Water spray, fog or mist.

**SPECIAL FIRE FIGHTING PROCEDURES:**

No specific fire fighting procedure given.

**UNUSUAL FIRE & EXPLOSION HAZARDS:**

Dust in high concentrations may form explosive mixtures with air.

**HAZARDOUS COMBUSTION PRODUCTS:**

Irritating gases/vapors/fumes. Oxides of: Carbon.

---

**6. ACCIDENTAL RELEASE MEASURES**

---

**PERSONAL PRECAUTIONS:**

Wear proper personal protective equipment (see MSDS Section 8).

**SPILL CLEAN-UP PROCEDURES:**

Avoid generating and spreading of dust. Shovel into dry containers. Cover and move the containers. Flush the area with water. Do not contaminate drainage or waterways. Repackage or recycle if possible.

---

**7. HANDLING AND STORAGE**

---

**HANDLING PRECAUTIONS:**

Avoid handling causing generation of dust. Wear full protective clothing for prolonged exposure and/or high concentrations. Eye wash and emergency shower must be available at the work place. Wash hands often and change clothing when needed. Provide good ventilation. Mechanical ventilation or local exhaust ventilation is required.

**STORAGE PRECAUTIONS:**

Store at moderate temperatures in dry, well ventilated area. Keep in original container.

**8. EXPOSURE CONTROLS, PERSONAL PROTECTION**

INGREDIENT NAME:	CAS No.:	OSHA PEL: TWA: STEL:	ACGIH TLV: TWA: STEL:	OTHER: TWA: STEL:	UNITS:
Particulates Not Otherwise Classified (PNOC)		5	3		mg/m3 resp.dus

**PROTECTIVE EQUIPMENT:**



**ENGINEERING CONTROLS:**

Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to reduce air contamination and keep worker exposure below the applicable limits.

**VENTILATION:** Supply natural or mechanical ventilation adequate to exhaust airborne product and keep exposures below the applicable limits.

**RESPIRATORS:** Use at least a NIOSH-approved N95 half-mask disposable or reusable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or reusable particulate respirator.

**PROTECTIVE GLOVES:** Use suitable protective gloves if risk of skin contact.

**EYE PROTECTION:** Wear dust resistant safety goggles where there is danger of eye contact.

**PROTECTIVE CLOTHING:** Wear appropriate clothing to prevent repeated or prolonged skin contact.

**HYGIENIC WORK PRACTICES:** Wash promptly with soap and water if skin becomes contaminated. Change work clothing daily if there is any possibility of contamination.

**9. PHYSICAL AND CHEMICAL PROPERTIES**

<b>APPEARANCE/PHYSICAL STATE:</b>	Powder, dust.
<b>COLOR:</b>	Off-white.
<b>ODOR:</b>	Odorless or no characteristic odor.
<b>SOLUBILITY DESCRIPTION:</b>	Insoluble in water.
<b>VAPOR DENSITY (air=1):</b>	N/D
<b>VAPOR PRESSURE:</b>	N/D
	TEMPERATURE (°F):

**10. STABILITY AND REACTIVITY**

**STABILITY:** Normally stable.

**CONDITIONS TO AVOID:**

Avoid heat.

**HAZARDOUS POLYMERIZATION:**

Will not polymerize.

**POLYMERIZATION DESCRIPTION:**

Not relevant.

**MATERIALS TO AVOID:**

Strong oxidizing agents.

**HAZARDOUS DECOMPOSITION PRODUCTS:**

No specific hazardous decomposition products noted.

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**11. TOXICOLOGICAL INFORMATION**

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**TOXICOLOGICAL INFORMATION:**

No toxicological data is available for this product.

---

**12. ECOLOGICAL INFORMATION**

---

**ECOLOGICAL INFORMATION:**

Contact M-I Environmental Affairs for ecological information.

---

**13. DISPOSAL CONSIDERATIONS**

---

**WASTE MANAGEMENT:**

This product does not meet the criteria of a hazardous waste if discarded in its purchased form. Under RCRA, it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixtures, processes, etc, may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.

**DISPOSAL METHODS:**

Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that containers are empty by RCRA criteria prior to disposal in a permitted industrial landfill.

---

**14. TRANSPORT INFORMATION**

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PRODUCT RQ:	N/A
U.S. DOT:	
U.S. DOT CLASS:	Not regulated.
CANADIAN TRANSPORT:	
TDGR CLASS:	Not regulated.
SEA TRANSPORT:	
IMDG CLASS:	Not regulated.
AIR TRANSPORT:	
ICAO CLASS:	Not regulated.

### 15. REGULATORY INFORMATION

**REGULATORY STATUS OF INGREDIENTS:**

**NAME:**

Particulates Not Otherwise Classi-  
fied (PNOC)

CAS No:	TSCA:	CERCLA:	SARA 302:	SARA 313:	DSL(CAN):
	N/A	N/A	N/A	N/A	N/A

**US FEDERAL REGULATIONS:**

**WASTE CLASSIFICATION:**

Not a hazardous waste by U.S. RCRA criteria. See Section 13.

**REGULATORY STATUS:**

This Product or its components, if a mixture, is subject to following regulations (Not meant to be all inclusive - selected regulations represented):

**SECTION 313:** This product does not contain toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR Part 372.

**SARA 311 Categories:**

1: Immediate (Acute) Health Effects.

The components of this product are listed on or are exempt from the following international chemical registries:

TSCA (U.S.)  
DSL (Canada)

**STATE REGULATIONS:**

**STATE REGULATORY STATUS:**

This product or its components, if a mixture, is subject to following regulations (Not meant to be all inclusive - selected regulations represented):

None.

**PROPOSITION 65:** This product does not contain chemicals considered by the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 as causing cancer or reproductive toxicity, and for which warnings are now required.

**CANADIAN REGULATIONS:**

**REGULATORY STATUS:**

This Material Safety Data Sheet has been prepared in compliance with the Controlled Product Regulations.

Canadian WHMIS Classification: Not a Controlled Product.

### 16. OTHER INFORMATION

**NPCA HMIS HAZARD INDEX:**

**FLAMMABILITY:**

**REACTIVITY:**

**NPCA HMIS PERS. PROTECT. INDEX:**

0 Minimal Hazard

1 Slight Hazard

0 Minimal Hazard

E - Safety Glasses, Gloves, Dust Respirator

**USER NOTES:**

N/A = Not applicable N/D = Not determined



10114 - DRILLING PAPER

**INFORMATION SOURCES:**

OSHA Permissible Exposure Limits, 29 CFR 1910, Subpart Z, Section 1910.1000, Air Contaminants.

ACGIH Threshold Limit Values and Biological Exposure Indices for Chemical Substances and Physical Agents (latest edition).

Sax's Dangerous Properties of Industrial Materials, 9th ed., Lewis, R.J. Sr., (ed.), VNR, New York, New York, (1997).

Product information provided by the commercial vendor(s).

**PREPARED BY:**

Sam Hoskin/bb

**REVISION No./Repl. MSDS of:**

1 / July 27, 1995

**MSDS STATUS:**

Approved.

**DATE:** January 4, 1999

**DISCLAIMER:**

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



A Schlumberger Company

## MATERIAL SAFETY DATA SHEET

MSDS No. 10034

Trade Name: DUO-VIS\*

Revision Date: 10/27/2010

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Trade Name:** DUO-VIS\*

**Chemical Family:** Polysaccharide  
**Product Use:** Drilling fluid additive.

**Supplied by:** M-I L.L.C.  
P.O. Box 42842  
Houston, TX 77242  
www.miswaco.slb.com

**Telephone Number:** 281-561-1511  
**Emergency Telephone (24 hr.):** 281-561-1600  
**Prepared by:** Product Safety Group

**Revision No.** 7

#### HMIS Rating

Health: 2

Flammability: 1

Physical Hazard: 0

PPE: E

4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. \*Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

### 2. HAZARDS IDENTIFICATION

**Emergency Overview:** Warning! May cause eye, skin, and respiratory tract irritation. May cause skin sensitization, an allergic reaction, on repeated exposure. Long term inhalation of particulates may cause lung damage.

#### Canadian Classification:

UN PIN No: Not regulated.

WHMIS Class: D2B

**Physical State:** Powder

**Color:** White to Tan

**Odor:** Slight

#### Potential Health Effects:

##### Acute Effects

**Eye Contact:** May irritate eyes.

**Skin Contact:** May be irritating to the skin. May cause skin sensitization, an allergic reaction, on repeated exposure.

**Inhalation:** May be irritating to the respiratory tract. Long term inhalation of particulate may cause lung damage.

**Ingestion:** May cause gastric distress, nausea and vomiting if ingested.

**Carcinogenicity & Chronic Effects:** See Section 11 - Toxicological Information.

**Routes of Exposure:** Eyes. Dermal (skin) contact. Inhalation.

**Target Organs/Medical Conditions Aggravated by Overexposure:** Eyes. Skin. Respiratory System.

# MATERIAL SAFETY DATA SHEET

MSDS No. 10034

Trade Name: DUO-VIS\*  
Revision Date: 10/27/2010

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## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Wt. %	Comments:
Xanthan gum	11138-66-2	99 - 99.9	No comments.
Glyoxal	107-22-2	0.1 - 1	No comments.

## 4. FIRST AID MEASURES

**Eye Contact:** Promptly wash eyes with lots of water while lifting eye lids. Look for and remove contact lenses. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

**Skin Contact:** Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.

**Inhalation:** Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Ingestion:** Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. If signs of irritation or toxicity occur seek medical attention.

**General notes:** Persons seeking medical attention should carry a copy of this MSDS with them.

## 5. FIRE FIGHTING MEASURES

### Flammable Properties

**Flash Point: F (C):** NA

**Flammable Limits in Air - Lower (%):** ND

**Flammable Limits in Air - Upper (%):** ND

**Autoignition Temperature: F (C):** ND

**Flammability Class:** ND

**Other Flammable Properties:** Particulate may accumulate static electricity. Dusts at sufficient concentrations can form explosive mixtures with air.

**Extinguishing Media:** Use extinguishing media appropriate for surrounding fire.

### Protection Of Fire-Fighters:

**Special Fire-Fighting Procedures:** Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways.

**Hazardous Combustion Products:** Oxides of: Carbon.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Use personal protective equipment identified in Section 8.

**Spill Procedures:** Evacuate the spill area with the exception of the spill response team. Contain spilled material. Do not allow spilled material to enter sewers, storm drains or surface waters. Avoid the generation of dust. Sweep, vacuum, or shovel and place into closable container for disposal.

# MATERIAL SAFETY DATA SHEET

MSDS No. 10034

Trade Name: **DUO-VIS\***  
Revision Date: 10/27/2010

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**Environmental Precautions:** Waste must be disposed of in accordance with federal, state and local laws.

## 7. HANDLING AND STORAGE

**Handling:** Put on appropriate personal protective equipment. Avoid contact with skin and eyes. Avoid generating or breathing dust. Product is slippery if wet. Use only with adequate ventilation. Wash thoroughly after handling.

**Storage:** Store at room temperature in dry, well ventilated area. Keep in original container. Keep container closed. Store away from incompatibles.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure Limits (TLV & PEL - 8H TWA):**

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Xanthan gum	11138-66-2	99 - 99.9	NA	NA	NA	(1)
Glyoxal	107-22-2	0.1 - 1	0.1 mg/m <sup>3</sup>	NA	NA	(sen)

### Notes

(1) Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m<sup>3</sup> (Inhalable); 3 mg/m<sup>3</sup> (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m<sup>3</sup> (Total); 5 mg/m<sup>3</sup> (Respirable).

(Sen) - Sensitizer.

**Engineering Controls:** Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to ensure air contamination and keep workers exposure below the applicable limits.

### Personal Protection Equipment

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazards present and the risk of exposure to those hazards. The PPE recommendations below are based on our assessment of the chemical hazards associated with this product. The risk of exposure and need for respiratory protection will vary from workplace to workplace and should be assessed by the user.

**Eye/Face Protection:** Dust resistant safety goggles.

**Skin Protection:** Wear appropriate clothing to prevent repeated or prolonged skin contact. Chemical resistant gloves recommended for prolonged or repeated contact. Use protective gloves made of: Neoprene. Nitrile.

**Respiratory Protection:** All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent.

If exposed to airborne particles of this product use at least a NIOSH-approved N95 half-mask disposable or re-useable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or re-useable particulate respirator.

**General Hygiene Considerations:** Wash promptly with soap and water if skin becomes contaminated. Change work clothing daily if there is any possibility of contamination.

# MATERIAL SAFETY DATA SHEET

MSDS No. 10034

Trade Name: **DUO-VIS\***  
Revision Date: 10/27/2010

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

**Color:** White to Tan  
**Odor:** Slight  
**Physical State:** Powder  
**pH:** 5.4 - 8.6  
**Specific Gravity (H2O = 1):** 1.5 g/cc  
**Bulk Density:** 50 lb/ft<sup>3</sup> (800 kg/m<sup>3</sup>)  
**Solubility (Water):** Soluble  
**Melting/Freezing Point:** ND  
**Boiling Point:** ND  
**Vapor Pressure:** NA  
**Vapor Density (Air=1):** NA  
**Evaporation Rate:** ND  
**Odor Threshold(s):** ND

## 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable  
**Conditions to Avoid:** Keep away from heat, sparks and flame.  
**Materials to Avoid:** Strong oxidizing agents.  
**Hazardous Decomposition Products:** For thermal decomposition products, see Section 5.  
**Hazardous Polymerization:** Will not occur

## 11. TOXICOLOGICAL INFORMATION

**Component Toxicological Data:** Any adverse component toxicological effects are listed below. If no effects are listed, no such data were found.

Ingredient	CAS No.	Acute Data
Xanthan gum	11138-66-2	Oral LD50: > 5,000 mg/kg (rat)
Glyoxal	107-22-2	Oral LD50: 200 mg/kg (rat); Dermal LD50: 10 ml/kg (rabbit)

**Product Toxicological Information:**  
No toxicological data is available for this product.

## 12. ECOLOGICAL INFORMATION

**Component Ecotoxicity Data:** Component ecotoxicity data are listed below. If no data are listed, none were found in the component review.

Ingredient	CAS No.	Data
Xanthan gum	11138-66-2	LC50 96H: 490 mg/l (rainbow trout); LC50 48H: 980 mg/l (Daphnia magna)
Glyoxal	107-22-2	LC50 96H static: 215,000 ug/l (Pimephales promelas (fathead minnow)); EC50 96H static: 66,480 - 148,960 ug/l (Selenastrum capricornutum (green algae))

**Product Ecotoxicity Data:** Contact M-I Environmental Affairs Department for available product ecotoxicity data.

# MATERIAL SAFETY DATA SHEET

MSDS No. 10034

Trade Name: **DUO-VIS\***  
Revision Date: 10/27/2010

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Biodegradation: ND  
Bioaccumulation: ND  
Octanol/Water Partition Coefficient: ND

## 13. DISPOSAL CONSIDERATIONS

**Waste Classification:** This product does not meet the criteria of a hazardous waste if discarded in its purchased form.

**Waste Management:** Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act ( RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.

**Disposal Method:** Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.

## 14. TRANSPORT INFORMATION

**U.S. DOT**

**Shipping Description:**

Not regulated for transportation by DOT, TDG, IMDG, ICAO/IATA.

**Canada TDG Shipping Description:**

Not regulated.

**UN PIN No:**

Not regulated.

**IMDG Shipping Description:**

Not regulated.

**ICAO/IATA Shipping Description:**

Not regulated.

## 15. REGULATORY INFORMATION

### U.S. Federal and State Regulations

**SARA 311/312 Hazard Categories:** Immediate (acute) health hazard.

**SARA 302/304, 313; CERCLA RQ, California Proposition 65:** Note: If no components are listed below, this product is not subject to the referenced SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

### International Chemical Inventories

# MATERIAL SAFETY DATA SHEET

MSDS No. 10034

Trade Name: **DUO-VIS\***  
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Australia AICS - Components are listed or exempt from listing.  
Canada DSL - Components are listed or exempt from listing.  
China Inventory - Components are listed or exempt from listing.  
European Union EINECS/ELINCS - Components are listed or exempt from listing.  
Japan METI ENCS - Components are listed or exempt from listing.  
Korea TCCL ECL - Components are listed or exempt from listing.  
New Zealand - Components are listed or exempt from listing.  
Philippine PICCS - Components are listed or exempt from listing.  
U.S. TSCA - Components are listed or exempt from listing.  
U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

## **Canadian Classification:**

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

**WHMIS Class:** D2B

## **16. OTHER INFORMATION**

**The following sections have been revised:** Company logo. 1, 16.

**NA - Not Applicable, ND - Not Determined.**

\*A mark of M-I L.L.C.

## **Disclaimer:**

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



# MATERIAL SAFETY DATA SHEET

MSDS NO. 12175

Trade Name: FED SEAL

Revision Date: 10/07/2003

## 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Name: FED SEAL  
Chemical Family: Mixture  
Product Use: Oil well drilling fluid additive.  
Emergency Telephone (24 hr.): 281-561-1600

Supplied by: FEDERAL  
Wholesale Drilling Mud  
P.O. Box 42842  
Houston, TX 77242

Telephone Number: 281-561-1511  
Contact Person: Catherine Miller, Product Safety

Revision Number: 2

### HMIS Rating

Health: 1

Flammability: 1

Physical Hazard: 0

PPE: E

HMIS Key: 4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. \*Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS NO:	Wt. %	Ingredient Comments:
Natural fibers		35 - 50	No comments.
Hulls		40 - 60	No comments.
Recycled newsprint		4 - 10	No comments.
Propene polymer		4 - 10	No comments.

## 3. HAZARDS IDENTIFICATION

Emergency Overview: Caution! May cause mechanical irritation of eyes, skin and respiratory tract. Long term inhalation of particulates may cause lung damage.

### Canadian WHMIS:

UN PIN No: Not regulated

WHMIS Class: Not a controlled product.

Physical State: Fibers. Flakes.

Odor: Cedar

Color: Brownish red

### Potential Health Effects:

#### Acute Effects

Eye Contact: May cause mechanical irritation  
Skin Contact: May cause mechanical irritation.  
Inhalation: May cause mechanical irritation.  
Ingestion: May cause gastric distress, nausea and vomiting if ingested.



# MATERIAL SAFETY DATA SHEET

Trade Name: **FED SEAL**

Revision Date: 10/07/2003

MSDS NO. 12175

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**Carcinogenicity & Chronic Effects:** See Section 11 - Toxicological Information.  
**Routes of Exposure:** Eyes. Dermal (skin) contact. Inhalation.  
**Target Organs:** Eyes. Skin. Respiratory System.  
**Medical Conditions Aggravated By Over Exposure:** Skin. Respiratory.

## 4. FIRST AID MEASURES

**Eye Contact:** Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

**Skin Contact:** Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.

**Inhalation:** Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.

**Ingestion:** Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. If signs of irritation or toxicity occur seek medical attention.

**General Notes:** Persons seeking medical attention should carry a copy of this MSDS with them.

## 5. FIRE FIGHTING MEASURES

### Flammable Properties

**Flash Point: F (C):** 350F (177C)  
**Flammable Limits in Air - Lower (%):** ND  
**Flammable Limits in Air - Upper (%):** ND  
**Autoignition Temperature: F(C)** ND  
**Flammability Class:** IIIB  
**Other Flammable Properties:** Particulate may accumulate static electricity. Dusts at sufficient concentrations can form explosive mixtures with air.

**Extinguishing Media:** Use extinguishing media appropriate for surrounding fire.

### Protection Of Fire-Fighters:

**Special Fire-Fighting Procedures:** Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways.

**Hazardous Combustion Products:** Oxides of: Carbon.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Use personal protective equipment identified in Section 8.

**Spill Procedures:** Evacuate surrounding area, if necessary. Wet product may create a slipping hazard. Contain spilled material. Avoid the generation of dust. Sweep, vacuum, or shovel and place into closable container for disposal.

**Environmental Precautions:** Do not allow to enter sewer or surface and subsurface waters. Waste must be disposed of in accordance with federal, state and local laws.

## 7. HANDLING AND STORAGE

**Handling:** Put on appropriate personal protective equipment. Avoid contact with skin and eyes. Avoid generating or breathing dust. Product is slippery if wet. Use only with adequate ventilation. Wash thoroughly after handling.

# MATERIAL SAFETY DATA SHEET

Trade Name: **FED SEAL**

Revision Date: 10/07/2003

MSDS NO. 12175

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**Storage:**

Store in dry, well-ventilated area. Keep container closed. Store away from incompatibles. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure Limits (TLV & PEL - 8H TWA):**

Ingredient	CAS NO:	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Natural fibers		35 - 50	NA	NA	NA	(1)
Hulls		40 - 60	NA	NA	NA	(1)
Recycled newsprint		4 - 10	NA	NA	NA	None
Propene polymer		4 - 10	NA	NA	NA	(1)

**Notes**

(1) Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m<sup>3</sup> (Inhalable); 3 mg/m<sup>3</sup> (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m<sup>3</sup> (Total); 5 mg/m<sup>3</sup> (Respirable).

**Engineering Controls:** Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to ensure air contamination and keep workers exposure below the applicable limits.

**Personal Protection Equipment**

**Eye/Face Protection:** Dust resistant safety goggles.

**Skin Protection:** Not normally necessary. If needed to minimize irritation: Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear chemical resistant gloves such as: Nitrile. Neoprene.

**Respiratory Protection:** If exposed to particulates/aerosols:  
Use at least a NIOSH-approved N95 half-mask disposable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or reuseable particulate respirator.  
If exposed to organic vapors:  
Use a NIOSH/MSHA-approved organic vapor respirator. CCROV: CCR with organic vapor cartridge.

Refer to Exposure Limits table (Section 8) for component specific respiratory protection recommendations.

**General Hygiene Considerations:** Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded, if contaminated with product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Color:</b>	Brownish red
<b>Odor:</b>	Cedar
<b>Physical State:</b>	Fibers. Flakes.
<b>pH:</b>	ND
<b>Vapor Pressure:</b>	NA
<b>Vapor Density (Air=1):</b>	NA
<b>Flash Point: F (C):</b>	350F (177C)
<b>Boiling Point:</b>	ND
<b>Melting/Freezing Point:</b>	ND
<b>Solubility (Water):</b>	Insoluble
<b>Specific Gravity (H2O = 1):</b>	0.58
<b>Evaporation Rate:</b>	NA
<b>Odor Threshold(s):</b>	ND

# MATERIAL SAFETY DATA SHEET

Trade Name: **FED SEAL**

MSDS NO. 12175

Revision Date: 10/07/2003

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## 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable  
**Conditions to Avoid:** ND  
**Materials to Avoid:** Oxidizers.  
**Hazardous Decomposition Products:** For thermal decomposition products, see Section 5.  
**Hazardous Polymerization:** Will not occur

## 11. TOXICOLOGICAL INFORMATION

### Component Toxicological Data

Ingredient	CAS NO:	Acute Data
Propene polymer		Oral LD50: >5000 mg/kg (rat); Dermal LD50: >2000 mg/kg (rabbit)

### **Product Toxicological Information:**

Long term inhalation of particulate can cause irritation, inflammation and/or permanent injury to the lungs. Illnesses such as pneumoconiosis ("dusty lung"), pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma may develop.

## 12. ECOLOGICAL INFORMATION

**Product Ecotoxicity Data:** Contact M-I Environmental Affairs Department for available product ecotoxicity data.

**Biodegradation:** ND  
**Bioaccumulation:** ND  
**Octanol/Water Partition Coefficient:** ND

## 13. DISPOSAL CONSIDERATIONS

**Waste Classification:** ND

**Waste Management:** Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act ( RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.

**Disposal Method:** Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.

## 14. TRANSPORT INFORMATION

### **U.S. DOT**

**Shipping Description:** Not regulated for transportation by DOT, TDG, IMDG, ICAO/IATA.

### **TDG (Canada):**

**Shipping Description:** Not regulated  
**UN PIN No:** Not regulated

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Trade Name: **FED SEAL**

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**IMDG:**

Shipping Description: Not regulated

**ICAO/IATA:**

Shipping Description: Not regulated

## 15. REGULATORY INFORMATION

### U.S. Federal and State Regulations

**SARA 311/312 Hazard Categories:** Not a SARA 311/312 hazard.

**SARA 302/304, 313; CERCLA RQ, California Proposition 65:** Note: If no components are listed below, this product is not subject to the referenced SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

### International Chemical Inventories

Australia AICS - Components are listed or exempt from listing.  
Canada DSL - Components are listed or exempt from listing.  
European EINECS - Components are listed or exempt from listing.  
U.S. TSCA - Components are listed or exempt from listing.  
U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

### Canadian WHMIS:

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

**WHMIS Class:** Not a controlled product.

## 16. OTHER INFORMATION

The following sections have been revised: 8, 15,

**NA - Not Applicable, ND - Not Determined.**

### **Disclaimer:**

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



## MATERIAL SAFETY DATA SHEET

MSDS NO. 10030

Trade Name: FLOXIT\*

Revision Date: 09/26/2006

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Trade Name:** FLOXIT\*  
**Chemical Family:** Anionic polyacrylamide  
**Product Use:** Oil well drilling fluid additive.  
**Emergency Telephone (24 hr.):** 281-561-1600

**Supplied by:** M-I L.L.C.  
P.O. Box 42842  
Houston, TX 77242  
www.miswaco.com

**Telephone Number:** 281-561-1512  
**Contact Person:** Joanne Galvan, Sr. Product Safety Specialist

**Revision Number:** 3

#### HMIS Rating

**Health:** 1

**Flammability:** 1

**Physical Hazard:** 0

**PPE:** E

**HMIS Key:** 4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. \*Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

### 2. HAZARDS IDENTIFICATION

**Emergency Overview:** Caution! May cause mechanical irritation of eyes, skin and respiratory tract. Long term inhalation of particulates may cause lung damage.

#### Canadian Classification:

**UN PIN No:** Not regulated.

**WHMIS Class:** Not a controlled product.

**Physical State:** Granular

**Odor:** Odorless

**Color:** Off-white

#### Potential Health Effects:

##### Acute Effects

**Eye Contact:** May cause mechanical irritation  
**Skin Contact:** May cause mechanical irritation.  
**Inhalation:** May cause mechanical irritation.  
**Ingestion:** May cause gastric distress, nausea and vomiting if ingested.

**Acute Effects Note:** This product may release ammonia or amines when heated or exposed to high pH. Ammonia is a severe eye, skin and respiratory irritant. Ammonia has a very strong odor and can be detected at levels as low as 5 ppm. Many amines are also eye, skin and respiratory irritants.

#### Carcinogenicity & Chronic Effects:

See Section 11 - Toxicological Information.

#### Routes of Exposure:

Eyes. Dermal (skin) contact. Inhalation.

#### Target Organs/Medical

Eyes. Skin. Respiratory System.

#### Conditions Aggravated by Overexposure:

# MATERIAL SAFETY DATA SHEET

Trade Name: FLOXIT\*

MSDS NO. 10030

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## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Wt. %	Comments:
Anionic polyacrylamide		60 - 100	No comments.

## 4. FIRST AID MEASURES

<b>Eye Contact:</b>	Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.
<b>Skin Contact:</b>	Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.
<b>Inhalation:</b>	Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
<b>Ingestion:</b>	Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. If signs of irritation or toxicity occur seek medical attention.
<b>General Notes:</b>	Persons seeking medical attention should carry a copy of this MSDS with them.

## 5. FIRE FIGHTING MEASURES

### Flammable Properties

<b>Flash Point: F (C):</b>	NA
<b>Flammable Limits in Air - Lower (%):</b>	ND
<b>Flammable Limits in Air - Upper (%):</b>	ND
<b>Autoignition Temperature: F (C):</b>	ND
<b>Flammability Class:</b>	NA
<b>Other Flammable Properties:</b>	Particulate may accumulate static electricity. Dusts at sufficient concentrations can form explosive mixtures with air.
<b>Extinguishing Media:</b>	Use extinguishing media appropriate for surrounding fire.

### Protection Of Fire-Fighters:

**Special Fire-Fighting Procedures:** Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways.

**Hazardous Combustion Products:** Oxides of: Carbon. Nitrogen. Ammonia.

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions:</b>	Use personal protective equipment identified in Section 8.
<b>Spill Procedures:</b>	Evacuate surrounding area, if necessary. Wet product may create a slipping hazard. Contain spilled material. Avoid the generation of dust. Sweep, vacuum, or shovel and place into closable container for disposal.
<b>Environmental Precautions:</b>	Do not allow to enter sewer or surface and subsurface waters. Waste must be disposed of in accordance with federal, state and local laws.

## 7. HANDLING AND STORAGE

<b>Handling:</b>	Put on appropriate personal protective equipment. Avoid contact with skin and eyes. Avoid generating or breathing dust. Product is slippery if wet. Use only with adequate ventilation. Wash thoroughly after handling.
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# MATERIAL SAFETY DATA SHEET

Trade Name: FLOXIT\*

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**Storage:**

Store in dry, well-ventilated area. Keep container closed. Store away from incompatibles. Store at temperature between 40F (4C) and 90F (32C) (integrity). Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure Limits (TLV & PEL - 8H TWA):**

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Anionic polyacrylamide		60 - 100	NA	NA	NA	(1) (6)

**Notes**

(1) Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m<sup>3</sup> (Inhalable); 3 mg/m<sup>3</sup> (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m<sup>3</sup> (Total); 5 mg/m<sup>3</sup> (Respirable).

(6) Ammonia or amines may be released when this component is heated or exposed to high pH. The recommended exposure limits for ammonia are ACGIH TLV 25 ppm and OSHA PEL 50 ppm. No general recommended exposure limit is available for amines. A NIOSH/MSHA approved respirator with ammonia/methylamine cartridges should be used to protect against ammonia or amine inhalation exposure.

**Engineering Controls:** Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to ensure air contamination and keep workers exposure below the applicable limits.

**Personal Protection Equipment**

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazards present and the risk of exposure to those hazards. The PPE recommendations below are based on our assessment of the chemical hazards associated with this product. The risk of exposure and need for respiratory protection will vary from workplace to workplace and should be assessed by the user.

**Eye/Face Protection:** Dust resistant safety goggles.

**Skin Protection:** Not normally necessary. If needed to minimize irritation: Wear appropriate clothing to prevent repeated or prolonged skin contact. Wear chemical resistant gloves such as: Nitrile. Neoprene.

**Respiratory Protection:** All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent.

If exposed to airborne particles of this product use at least a NIOSH-approved N95 half-mask disposable or re-useable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or re-useable particulate respirator.

**General Hygiene Considerations:** Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded, if contaminated with product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Color:</b>	Off-white
<b>Odor:</b>	Odorless
<b>Physical State:</b>	Granular
<b>pH:</b>	5 - 7 (aqueous solution)
<b>Specific Gravity (H2O = 1):</b>	1.4 at 68F (20C)
<b>Solubility (Water):</b>	Soluble
<b>Melting/Freezing Point:</b>	ND
<b>Boiling Point:</b>	ND
<b>Vapor Pressure:</b>	NA

# MATERIAL SAFETY DATA SHEET

Trade Name: FLOXIT\*  
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MSDS NO. 10030  
Vapor Density (Air=1): NA  
Evaporation Rate: NA  
Odor Threshold(s): ND

## 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable  
**Conditions to Avoid:** Keep away from heat, sparks and flame. Avoid contact with water and moist air - product is hygroscopic.  
**Materials to Avoid:** Oxidizers. Iron. Copper. Aluminum.  
**Hazardous Decomposition Products:** For thermal decomposition products, see Section 5.  
**Hazardous Polymerization:** Will not occur

## 11. TOXICOLOGICAL INFORMATION

**Component Toxicological Data:** Any adverse component toxicological effects are listed below. If no effects are listed, no such data were found.

Ingredient	CAS No.	Acute Data
Anionic polyacrylamide		Oral LD50: Estimated >2000 mg/kg (rat)

### Product Toxicological Information:

Product Oral LD50: >2.5 g/kg (rat); Dermal LD50: >10 g/kg (rabbit); Inhalation LC50: estimated to be >20 mg/l/4H (rat) (vendor MSDS)

Long term inhalation of particulate can cause irritation, inflammation and/or permanent injury to the lungs. Illnesses such as pneumoconiosis ("dusty lung"), pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma may develop.

This product may contain trace amounts of acrylamide (< 0.1%). Acrylamide has been classified by the International Agency for Research on Cancer (IARC) as a Group 2A carcinogen (probably carcinogenic to humans) and a suspect carcinogen by the National Toxicology Program (NTP). (LOLI)

## 12. ECOLOGICAL INFORMATION

**Product Ecotoxicity Data:** Contact M-I Environmental Affairs Department for available product ecotoxicity data.

**Biodegradation:** ND  
**Bioaccumulation:** ND  
**Octanol/Water Partition Coefficient:** ND

## 13. DISPOSAL CONSIDERATIONS

**Waste Classification:** ND

**Waste Management:** Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act (RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.

**Disposal Method:** Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.



# MATERIAL SAFETY DATA SHEET

MSDS NO. 10030

Trade Name: FLOXIT\*  
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## 14. TRANSPORT INFORMATION

<b>U.S. DOT Shipping Description:</b>	Not regulated for transportation by DOT, TDG, IMDG, ICAO/IATA.
<b>Canada TDG Shipping Description:</b>	Not regulated.
<b>UN PIN No:</b>	Not regulated.
<b>IMDG Shipping Description:</b>	Not regulated.
<b>ICAO/IATA Shipping Description:</b>	Not regulated.

## 15. REGULATORY INFORMATION

### U.S. Federal and State Regulations

**SARA 311/312 Hazard Categories:** Not a SARA 311/312 hazard.

**SARA 302/304, 313; CERCLA RQ, Note:** If no components are listed below, this product is not subject to the referenced California Proposition 65: SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

### International Chemical Inventories

Australia AICS - Components are listed or exempt from listing.  
Canada DSL - Components are listed or exempt from listing.  
China Inventory - Components are listed or exempt from listing.  
European EINECS - Components are listed or exempt from listing.  
Japan METI ENCS - Components are listed or exempt from listing.  
Korea TCCL ECL - Components are listed or exempt from listing.  
Philippine PICCS - Components are listed or exempt from listing.  
U.S. TSCA - Components are listed or exempt from listing.  
U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

### Canadian Classification:

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

**WHMIS Class:** Not a controlled product.

## 16. OTHER INFORMATION

**The following sections have been revised:** 1, 2, 3, 5, 7, 9, 10, 11, 12, 13, 15, 16

**NA - Not Applicable, ND - Not Determined.**

\*A mark of M-I L.L.C.

### **Disclaimer:**

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



A Schlumberger Company

## MATERIAL SAFETY DATA SHEET

MSDS No. 10618

Trade Name: MAX GEL\*

Revision Date: 12/15/2010

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Trade Name:** MAX GEL\*  
**Chemical Family:** Mixture  
**Product Use:** Drilling fluid additive.  
**Supplied by:** M-I L.L.C.  
P.O. Box 42842  
Houston, TX 77242  
www.miswaco.slb.com  
**Telephone Number:** 281-561-1511  
**Emergency Telephone (24 hr.):** 281-561-1600  
**Prepared by:** Product Safety Group  
**Revision No.** 7

#### HMIS Rating

**Health:** 1\*      **Flammability:** 0      **Physical Hazard:** 0      **PPE:** E

4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. \*Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

### 2. HAZARDS IDENTIFICATION

**Emergency Overview:** Caution! May cause mechanical irritation of eyes, skin and respiratory tract. Long term inhalation of particulates may cause lung damage. Cancer hazard. Contains crystalline silica which may cause cancer.

#### Canadian Classification:

**UN PIN No:** Not regulated.

**WHMIS Class:** D2A

**Physical State:** Powder      **Color:** Tan to Gray      **Odor:** Odorless

#### Potential Health Effects:

##### Acute Effects

**Eye Contact:** May cause mechanical irritation  
**Skin Contact:** May cause mechanical irritation. Long term contact can cause skin dryness.  
**Inhalation:** May cause mechanical irritation.  
**Ingestion:** May cause gastric distress, nausea and vomiting if ingested.

**Carcinogenicity & Chronic Effects:** See Section 11 - Toxicological Information.

**Routes of Exposure:** Eyes. Dermal (skin) contact. Inhalation.

**Target Organs/Medical Conditions Aggravated by Overexposure:** Eyes. Skin. Respiratory System.

# MATERIAL SAFETY DATA SHEET

MSDS No. 10618

Trade Name: **MAX GEL\***  
Revision Date: 12/15/2010

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## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Wt. %	Comments:
Bentonite	1302-78-9	>90	No comments.
Silica, crystalline, quartz	14808-60-7	2 - 15	No comments.
Silica, crystalline, Tridymite	15468-32-3	0 - 1	No comments.
Gypsum (Calcium sulfate)	13397-24-5	0 - 1	CAS 7778-18-9 also applies.

## 4. FIRST AID MEASURES

<b>Eye Contact:</b>	Promptly wash eyes with lots of water while lifting eye lids. Look for and remove contact lenses. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.
<b>Skin Contact:</b>	Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.
<b>Inhalation:</b>	Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
<b>Ingestion:</b>	Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. If signs of irritation or toxicity occur seek medical attention.
<b>General notes:</b>	Persons seeking medical attention should carry a copy of this MSDS with them.

## 5. FIRE FIGHTING MEASURES

### Flammable Properties

<b>Flash Point: F (C):</b>	NA
<b>Flammable Limits in Air - Lower (%):</b>	NA
<b>Flammable Limits in Air - Upper (%):</b>	NA
<b>Autoignition Temperature: F (C):</b>	NA
<b>Flammability Class:</b>	NA
<b>Other Flammable Properties:</b>	ND
<b>Extinguishing Media:</b>	This material is not combustible. Use extinguishing media appropriate for surrounding fire.

### Protection Of Fire-Fighters:

**Special Fire-Fighting Procedures:** Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways.

**Hazardous Combustion Products:** Not determined.

## 6. ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Use personal protective equipment identified in Section 8.

# MATERIAL SAFETY DATA SHEET

MSDS No. 10618

Trade Name: **MAX GEL** \*  
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**Spill Procedures:** Contain spilled material. If released into the environment, take all reasonable measures to repair, remedy and confine the effects of the substance. Remediate, manage, remove or otherwise dispose of the substance in accordance with applicable laws and regulations. Wet product may create a slipping hazard. Avoid the generation of dust. Sweep, vacuum, or shovel and place into closable container for disposal.

**Environmental Precautions:** Waste must be disposed of in accordance with federal, state and local laws.

## 7. HANDLING AND STORAGE

**Handling:** Put on appropriate personal protective equipment. Avoid contact with skin and eyes. Avoid generating or breathing dust. Product is slippery if wet. Use only in a well ventilated area. Wash thoroughly after handling.

**Storage:** Store in dry, well-ventilated area. Keep container closed. Store away from incompatibles. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Limits (TLV & PEL - 8H TWA):

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Bentonite	1302-78-9	>90	NA	NA	NA	(1)
Silica, crystalline, quartz	14808-60-7	2 - 15	0.025 mg/m <sup>3</sup>	see Table Z-3	50 mg/m <sup>3</sup> IDLH (NIOSH)	(R)
Silica, crystalline, Tridymite	15468-32-3	0 - 1	0.05 mg/m <sup>3</sup>	see Table Z-3	NA	(R)
Gypsum (Calcium sulfate)	13397-24-5	0 - 1	10 mg/m <sup>3</sup>	15 mg/m <sup>3</sup> (total); 5 mg/m <sup>3</sup> (respirable)	NA	None

### Notes

(1) Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m<sup>3</sup> (Inhalable); 3 mg/m<sup>3</sup> (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m<sup>3</sup> (Total); 5 mg/m<sup>3</sup> (Respirable).

(R) Respirable fraction.

Table Z-3: PEL for Mineral Dusts containing crystalline silica are 10 mg/m<sup>3</sup> / (%SiO<sub>2</sub>+2) for quartz and 1/2 the calculated quartz value for cristobalite and tridymite. 29 CFR 1910.1000.

**Engineering Controls:** Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to ensure air contamination and keep workers exposure below the applicable limits.

### Personal Protection Equipment

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazards present and the risk of exposure to those hazards. The PPE recommendations below are based on our assessment of the chemical hazards associated with this product. The risk of exposure and need for respiratory protection will vary from workplace to workplace and should be assessed by the user.

**Eye/Face Protection:** Dust resistant safety goggles.

# MATERIAL SAFETY DATA SHEET

MSDS No. 10618

Trade Name: **MAX GEL\***  
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**Skin Protection:** Wear appropriate clothing to prevent repeated or prolonged skin contact. Chemical resistant gloves recommended for prolonged or repeated contact. Use protective gloves made of: Nitrile. Neoprene.

**Respiratory Protection:** All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent.

If exposed to airborne particles of this product use at least a NIOSH-approved N95 half-mask disposable or re-useable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or re-useable particulate respirator.

**General Hygiene Considerations:** Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded, if contaminated with product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Color:</b>	Tan to Gray
<b>Odor:</b>	Odorless
<b>Physical State:</b>	Powder
<b>pH:</b>	ND
<b>Specific Gravity (H<sub>2</sub>O = 1):</b>	2.3 - 2.6
<b>Solubility (Water):</b>	Insoluble.
<b>Melting/Freezing Point:</b>	ND
<b>Boiling Point:</b>	ND
<b>Vapor Pressure:</b>	NA
<b>Vapor Density (Air=1):</b>	NA
<b>Evaporation Rate:</b>	NA
<b>Odor Threshold(s):</b>	ND

## 10. STABILITY AND REACTIVITY

<b>Chemical Stability:</b>	Stable
<b>Conditions to Avoid:</b>	Keep away from heat, sparks and flame.
<b>Materials to Avoid:</b>	ND.
<b>Hazardous Decomposition Products:</b>	For thermal decomposition products, see Section 5.
<b>Hazardous Polymerization</b>	Will not occur

## 11. TOXICOLOGICAL INFORMATION

**Component Toxicological Data:** Any adverse component toxicological effects are listed below. If no effects are listed, no such data were found.

# MATERIAL SAFETY DATA SHEET

MSDS No. 10618

Trade Name: **MAX GEL\***  
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Ingredient	Component Toxicological Summary
Silica, crystalline, quartz	Crystalline silica is the most widely occurring of all minerals. The most common form of silica is sand. The International Agency for Research on Cancer (IARC) has designated crystalline silica in the form of quartz or cristobalite a Group 1 (carcinogenic to humans). This designation was based on an increased risk of lung cancer among crystalline silica exposed workers. IARC did note that carcinogenicity of crystalline silica in humans was not detected in all industrial circumstances studied. Further, carcinogenicity of crystalline silica may be dependent on inherent characteristics of the crystalline silica or external factors affecting its biological activity or distribution of polymorphs. (IARC Vol. 68, 1997, p. 41). The National Toxicology Program (NTP) classifies crystalline silica as "reasonably anticipated to cause cancer in humans" (6th Annual Report on Carcinogens, 1991). Long term inhalation of crystalline silica can also result in the lung disease, silicosis. Symptoms of this disease include coughing and shortness of breath. (NJ HSFS, January 1996)

## Product Toxicological Information:

Long term inhalation of particulate can cause irritation, inflammation and/or permanent injury to the lungs. Illnesses such as pneumoconiosis ("dusty lung"), pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma may develop.

## 12. ECOLOGICAL INFORMATION

**Component Ecotoxicity Data:** Component ecotoxicity data are listed below. If no data are listed, none were found in the component review.

**Product Ecotoxicity Data:** Contact M-I Environmental Affairs Department for available product ecotoxicity data.

**Biodegradation:** ND

**Bioaccumulation:** ND

**Octanol/Water Partition Coefficient:** ND

## 13. DISPOSAL CONSIDERATIONS

**Waste Classification:** ND

**Waste Management:** Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act ( RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.

**Disposal Method:** Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.

## 14. TRANSPORT INFORMATION

**U.S. DOT Shipping Description:** Not regulated for transportation by DOT, TDG, IMDG, ICAO/IATA.

**Canada TDG Shipping Description:** Not regulated.

**UN PIN No:** Not regulated.

# MATERIAL SAFETY DATA SHEET

MSDS No. 10618

Trade Name: **MAX GEL\***  
Revision Date: 12/15/2010

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IMDG Shipping Description: Not regulated.  
ICAO/IATA Shipping Description: Not regulated.

## 15. REGULATORY INFORMATION

### U.S. Federal and State Regulations

**SARA 311/312 Hazard Categories:** Delayed (chronic) health hazard.

**SARA 302/304, 313; CERCLA RQ, California Proposition 65:** Note: If no components are listed below, this product is not subject to the referenced SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

Ingredient	SARA 302 / TPQs	SARA 313	CERCLA RQ	CA 65 Cancer	CA 65 Dev. Tox.	CA 65 Repro. F	CA 65 Repro. M
Silica, crystalline, quartz	---	---	---	X	---	---	---
Silica, crystalline, Tridymite	---	---	---	X	---	---	---

### International Chemical Inventories

Australia AICS - Components are listed or exempt from listing.  
Canada DSL - Components are listed or exempt from listing.  
China Inventory - Components are listed or exempt from listing.  
European Union EINECS/ELINCS - Components are listed or exempt from listing.  
Japan METI ENCS - Components are listed or exempt from listing.  
Korea TCCL ECL - Components are listed or exempt from listing.  
New Zealand - Components are listed or exempt from listing.  
Philippine PICCS - Components are listed or exempt from listing.  
U.S. TSCA - Components are listed or exempt from listing.  
U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

### Canadian Classification:

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

**WHMIS Class:** D2A

## 16. OTHER INFORMATION

The following sections have been revised: 1, 6, 8, 12, 16.

**NA - Not Applicable, ND - Not Determined.**

\*A mark of M-I L.L.C.

### **Disclaimer:**

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



MATERIAL SAFETY DATA SHEET

MSDS No. 12412

Trade Name: M-I GEL\*

Revision Date: 06/09/2010

**1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION**

Trade Name: M-I GEL\*  
Chemical Family: Mixture  
Product Use: Drilling fluid additive.  
Supplied by: M-I L.L.C.  
P.O. Box 42842  
Houston, TX 77242  
www.miswaco.com  
Telephone Number: 281-561-1512  
Emergency Telephone (24 hr.): 281-561-1600  
Prepared by: Product Safety Group  
Revision No. 5

HMIS Rating  
Health: 1\*                      Flammability: 0                      Physical Hazard: 0                      PPE: E

4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. \*Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

**2. HAZARDS IDENTIFICATION**

Emergency Overview: Caution! May cause eye, skin, and respiratory tract irritation. Long term inhalation of particulates may cause lung damage. Cancer hazard. Contains crystalline silica which may cause cancer.

Canadian Classification:  
UN PIN No: Not regulated.                      WHMIS Class: D2A

Physical State: Powder                      Color: Tan to grey                      Odor: Odorless

Potential Health Effects:

Acute Effects

Eye Contact: May cause mechanical irritation  
Skin Contact: May cause mechanical irritation. Long term contact can cause skin dryness.  
Inhalation: May cause mechanical irritation.  
Ingestion: May cause gastric distress, nausea and vomiting if ingested.

Carcinogenicity & Chronic Effects: See Section 11 - Toxicological Information.

Routes of Exposure: Eyes. Dermal (skin) contact. Inhalation.  
Target Organs/Medical Conditions Aggravated by Overexposure: Eyes. Skin. Respiratory System.



# MATERIAL SAFETY DATA SHEET

MSDS No. 12412

Trade Name: M-I GEL\*  
Revision Date: 06/09/2010

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## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Wt. %	Comments:
Bentonite	1302-78-9	80 - 95	No comments.
Silica, crystalline, quartz	14808-60-7	2 - 15	No comments.
Silica, crystalline, Tridymite	15468-32-3	0 - 1	No comments.
Gypsum (Calcium sulfate) (CAS 7778-18-9 also applies.)	13397-24-5	0 - 1	No comments.

## 4. FIRST AID MEASURES

- Eye Contact:** Promptly wash eyes with lots of water while lifting eye lids. Look for and remove contact lenses. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.
- Skin Contact:** Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.
- Inhalation:** Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
- Ingestion:** Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. If signs of irritation or toxicity occur seek medical attention.
- General notes:** Persons seeking medical attention should carry a copy of this MSDS with them.

## 5. FIRE FIGHTING MEASURES

### Flammable Properties

- Flash Point: F (C):** NA
- Flammable Limits in Air - Lower (%):** NA
- Flammable Limits in Air - Upper (%):** NA
- Autoignition Temperature: F (C):** NA
- Flammability Class:** NA
- Other Flammable Properties:** ND
- Extinguishing Media:** This material is not combustible. Use extinguishing media appropriate for surrounding fire.

### Protection Of Fire-Fighters:

**Special Fire-Fighting Procedures:** Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways.

**Hazardous Combustion Products:** Not determined.

## 6. ACCIDENTAL RELEASE MEASURES

- Personal Precautions:** Use personal protective equipment identified in Section 8.

# MATERIAL SAFETY DATA SHEET

MSDS No. 12412

Trade Name: M-I GEL\*  
Revision Date: 06/09/2010

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**Spill Procedures:** Evacuate the spill area with the exception of the spill response team. Wet product may create a slipping hazard. Contain spilled material. Do not allow spilled material to enter sewers, storm drains or surface waters. Avoid the generation of dust. Sweep, vacuum, or shovel and place into closable container for disposal.

**Environmental Precautions:** Waste must be disposed of in accordance with federal, state and local laws.

## 7. HANDLING AND STORAGE

**Handling:** Put on appropriate personal protective equipment. Avoid contact with skin and eyes. Avoid generating or breathing dust. Product is slippery if wet. Use only in a well ventilated area. Wash thoroughly after handling.

**Storage:** Store in dry, well-ventilated area. Keep container closed. Store away from incompatibles. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

### Exposure Limits (TLV & PEL - 8H TWA):

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Bentonite	1302-78-9	80 - 95	NA	NA	NA	(1)
Silica, crystalline, quartz	14808-60-7	2 - 15	0.025 mg/m <sup>3</sup>	see Table Z-3	50 mg/m <sup>3</sup> IDLH (NIOSH)	(R)
Silica, crystalline, Tridymite	15468-32-3	0 - 1	0.05 mg/m <sup>3</sup>	see Table Z-3	NA	(R)
Gypsum (Calcium sulfate) (CAS 7778-18-9 also applies.)	13397-24-5	0 - 1	10 mg/m <sup>3</sup>	15 mg/m <sup>3</sup> (total); 5 mg/m <sup>3</sup> (respirable)	NA	None

### Notes

(1) Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m<sup>3</sup> (Inhalable); 3 mg/m<sup>3</sup> (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m<sup>3</sup> (Total); 5 mg/m<sup>3</sup> (Respirable).

(R) Respirable fraction.

Table Z-3: PEL for Mineral Dusts containing crystalline silica are 10 mg/m<sup>3</sup> / (%SiO<sub>2</sub>+2) for quartz and 1/2 the calculated quartz value for cristobalite and tridymite. 29 CFR 1910.1000.

**Engineering Controls:** Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to ensure air contamination and keep workers exposure below the applicable limits.

### Personal Protection Equipment

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazards present and the risk of exposure to those hazards. The PPE recommendations below are based on our assessment of the chemical hazards associated with this product. The risk of exposure and need for respiratory protection will vary from workplace to workplace and should be assessed by the user.

**Eye/Face Protection:** Dust resistant safety goggles.

**Skin Protection:** Wear appropriate clothing to prevent repeated or prolonged skin contact. Chemical resistant gloves recommended for prolonged or repeated contact. Use protective gloves made of: Nitrile. Neoprene.

# MATERIAL SAFETY DATA SHEET

MSDS No. 12412

Trade Name: M-I GEL\*  
Revision Date: 06/09/2010

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## Respiratory Protection:

All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent.

If exposed to airborne particles of this product use at least a NIOSH-approved N95 half-mask disposable or re-useable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or re-useable particulate respirator.

**General Hygiene Considerations:** Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded, if contaminated with product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Color:	Tan to grey
Odor:	Odorless
Physical State:	Powder
pH:	ND
Specific Gravity (H <sub>2</sub> O = 1):	2.3 - 2.6
Solubility (Water):	Insoluble
Melting/Freezing Point:	ND
Boiling Point:	ND
Vapor Pressure:	NA
Vapor Density (Air=1):	NA
Evaporation Rate:	NA
Odor Threshold(s):	ND

## 10. STABILITY AND REACTIVITY

Chemical Stability:	Stable
Conditions to Avoid:	Keep away from heat, sparks and flame.
Materials to Avoid:	ND.
Hazardous Decomposition Products:	For thermal decomposition products, see Section 5.
Hazardous Polymerization	Will not occur

## 11. TOXICOLOGICAL INFORMATION

**Component Toxicological Data:** Any adverse component toxicological effects are listed below. If no effects are listed, no such data were found.

# MATERIAL SAFETY DATA SHEET

MSDS No. 12412

Trade Name: M-I GEL\*  
Revision Date: 06/09/2010

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Ingredient	Component Toxicological Summary
Silica, crystalline, quartz	<p>Crystalline silica is the most widely occurring of all minerals. The most common form of silica is sand. The International Agency for Research on Cancer (IARC) has designated crystalline silica in the form of quartz or cristobalite a Group 1 (carcinogenic to humans). This designation was based on an increased risk of lung cancer among crystalline silica exposed workers. IARC did note that carcinogenicity of crystalline silica in humans was not detected in all industrial circumstances studied. Further, carcinogenicity of crystalline silica may be dependent on inherent characteristics of the crystalline silica or external factors affecting its biological activity or distribution of polymorphs. (IARC Vol. 68, 1997, p. 41).</p> <p>The National Toxicology Program (NTP) classifies crystalline silica as "reasonably anticipated to cause cancer in humans" (6th Annual Report on Carcinogens, 1991). Long term inhalation of crystalline silica can also result in the lung disease, silicosis. Symptoms of this disease include coughing and shortness of breath. (NJ HSFS, January 1996)</p>

## Product Toxicological Information:

Long term inhalation of particulate can cause irritation, inflammation and/or permanent injury to the lungs. Illnesses such as pneumoconiosis ("dusty lung"), pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma may develop.

## 12. ECOLOGICAL INFORMATION

**Component Ecotoxicity Data:** Component ecotoxicity data are listed below. If no data are listed, none were found in the component review.

**Product Ecotoxicity Data:** Contact M-I Environmental Affairs Department for available product ecotoxicity data.

**Biodegradation:** ND

**Bioaccumulation:** ND

**Octanol/Water Partition Coefficient:** ND

## 13. DISPOSAL CONSIDERATIONS

**Waste Classification:** ND

**Waste Management:** Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act ( RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.

**Disposal Method:** Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.

## 14. TRANSPORT INFORMATION

**U.S. DOT Shipping Description:** Not regulated for transportation by DOT, TDG, IMDG, ICAO/IATA.

**Canada TDG Shipping Description:** Not regulated.

**UN PIN No:** Not regulated.

# MATERIAL SAFETY DATA SHEET

MSDS No. 12412

Trade Name: M-I GEL\*  
Revision Date: 06/09/2010

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IMDG Shipping Description: Not regulated.  
ICAO/IATA Shipping Description: Not regulated.

## 15. REGULATORY INFORMATION

### U.S. Federal and State Regulations

**SARA 311/312 Hazard Categories:** Delayed (chronic) health hazard.

**SARA 302/304, 313; CERCLA RQ, California Proposition 65:** Note: If no components are listed below, this product is not subject to the referenced SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

Ingredient	SARA 302 / TPQs	SARA 313	CERCLA RQ	CA 65 Cancer	CA 65 Dev. Tox.	CA 65 Repro. F	CA 65 Repro. M
Silica, crystalline, quartz	---	---	---	X	---	---	---
Silica, crystalline, Tridymite	---	---	---	X	---	---	---

### International Chemical Inventories

Australia AICS - Components are listed or exempt from listing.  
Canada DSL - Components are listed or exempt from listing.  
China Inventory - Components are listed or exempt from listing.  
European Union EINECS/ELINCS - Components are listed or exempt from listing.  
Japan METI ENCS - Components are listed or exempt from listing.  
Korea TCCL ECL - Components are listed or exempt from listing.  
New Zealand - Components are listed or exempt from listing.  
Philippine PICCS - Components are listed or exempt from listing.  
U.S. TSCA - Components are listed or exempt from listing.  
U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

### Canadian Classification:

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

**WHMIS Class:** D2A

## 16. OTHER INFORMATION

The following sections have been revised: 1, 4, 6, 15, 16

**NA - Not Applicable, ND - Not Determined.**

\*A mark of M-I L.L.C.

### Disclaimer:

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

# MATERIAL SAFETY DATA SHEET

## POLYSAL

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### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

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**TRADE NAME:** POLYSAL

**CHEMICAL CLASS:** Pregelatinized starch, biocide treated.

**APPLICATIONS:** Fluid loss reducer.

**EMERGENCY TELEPHONE:** 281-561-1600

**SUPPLIER:** Supplied by a Business Unit of  
M-I L.L.C.  
P.O. Box 42842, Houston, Texas 77242-2842  
See cover sheet for local supplier.

**TELEPHONE:** 281-561-1509

**FAX:** 281-561-7240

**CONTACT PERSON:** Sam Hoskin - Manager, Occupational Health

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### 2. COMPOSITION, INFORMATION ON INGREDIENTS

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INGREDIENT NAME:	CAS No.:	CONTENTS :	EPA RQ:	TPQ:
Starch	9005-25-8	99 %		
5-Chloro-2-methyl-4-isothiazolin-3-one	26172-55-4	0-1 %		
2-Methyl-4-isothiazolin-3-one	2682-20-4	0-1 %		

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### 3. HAZARDS IDENTIFICATION

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#### EMERGENCY OVERVIEW:

CAUTION! MAY CAUSE EYE, SKIN AND RESPIRATORY TRACT IRRITATION. Avoid contact with eyes, skin and clothing. Avoid breathing airborne product. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

This product is a/an white powder. May form explosive dust-air mixtures. Slippery when wet. A nuisance dust. No significant immediate hazards for emergency response personnel are known.

#### ACUTE EFFECTS:

#### HEALTH HAZARDS, GENERAL:

Particulates may cause mechanical irritation to the eyes, nose, throat and lungs. Particulate inhalation may lead to pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma. Dermatitis and asthma may result from short contact periods.

**INHALATION:** May be irritating to the respiratory tract if inhaled.

**INGESTION:** May cause gastric distress, nausea and vomiting if ingested.

**SKIN:** May be irritating to the skin.

**EYES:** May be irritating to the eyes.

**CHRONIC EFFECTS:**

**CARCINOGENICITY:**

IARC: Not listed. OSHA: Not regulated. NTP: Not listed.

**ROUTE OF ENTRY:**

Inhalation. Skin and/or eye contact.

**TARGET ORGANS:**

Respiratory system, lungs. Skin. Eyes.

---

#### 4. FIRST AID MEASURES

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**GENERAL:**

Persons seeking medical attention should carry a copy of this MSDS with them.

**INHALATION:**

Move the exposed person to fresh air at once. Perform artificial respiration if breathing has stopped. Get medical attention.

**INGESTION:**

Drink a couple of glasses water or milk. Do NOT induce vomiting unless directed to do so by a physician. Never give anything by mouth to an unconscious person. Get medical attention.

**SKIN:**

Wash skin thoroughly with soap and water. Remove contaminated clothing. Get medical attention if any discomfort continues.

**EYES:**

Promptly wash eyes with lots of water while lifting the eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

---

#### 5. FIRE FIGHTING MEASURES

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**AUTO IGNITION TEMP. (°F):**

N/D

**FLAMMABILITY LIMIT - LOWER(%):**

N/D

**FLAMMABILITY LIMIT - UPPER(%):**

N/D

**EXTINGUISHING MEDIA:**

Carbon dioxide (CO2). Dry chemicals. Foam. Water spray, fog or mist.

**SPECIAL FIRE FIGHTING PROCEDURES:**

No specific fire fighting procedure given.

**UNUSUAL FIRE & EXPLOSION HAZARDS:**

Dust in high concentrations may form explosive mixtures with air.

**HAZARDOUS COMBUSTION PRODUCTS:**

Irritating gases/vapors/fumes. Oxides of: Carbon.

---

#### 6. ACCIDENTAL RELEASE MEASURES

---

**PERSONAL PRECAUTIONS:**

Wear proper personal protective equipment (see MSDS Section 8).

**SPILL CLEAN-UP PROCEDURES:**

Avoid generating and spreading of dust. Shovel into dry containers. Cover and move the containers. Flush the area with water. Do not contaminate drainage or waterways. Repackage or recycle if possible.

## 7. HANDLING AND STORAGE

### HANDLING PRECAUTIONS:

Avoid handling causing generation of dust. Wear full protective clothing for prolonged exposure and/or high concentrations. Eye wash and emergency shower must be available at the work place. Wash hands often and change clothing when needed. Provide good ventilation. Mechanical ventilation or local exhaust ventilation is required.

### STORAGE PRECAUTIONS:

Store at moderate temperatures in dry, well ventilated area. Keep in original container.

## 8. EXPOSURE CONTROLS, PERSONAL PROTECTION

INGREDIENT NAME:	CAS No.:	OSHA PEL:		ACGIH TLV:		OTHER:		UNITS:
		TWA:	STEL:	TWA:	STEL:	TWA:	STEL:	
Starch	9005-25-8	15		10				mg/m <sup>3</sup> total dust

### PROTECTIVE EQUIPMENT:



### ENGINEERING CONTROLS:

Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to reduce air contamination and keep worker exposure below the applicable limits.

**VENTILATION:** Supply natural or mechanical ventilation adequate to exhaust airborne product and keep exposures below the applicable limits.

**RESPIRATORS:** Use at least a NIOSH-approved N95 half-mask disposable or reuseable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or reuseable particulate respirator.

### PROTECTIVE GLOVES:

Use suitable protective gloves if risk of skin contact.

### EYE PROTECTION:

Wear dust resistant safety goggles where there is danger of eye contact.

### PROTECTIVE CLOTHING:

Wear appropriate clothing to prevent repeated or prolonged skin contact.

### HYGIENIC WORK PRACTICES:

Wash promptly with soap and water if skin becomes contaminated. Change work clothing daily if there is any possibility of contamination.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>APPEARANCE/PHYSICAL STATE:</b>	Powder, dust.	
<b>COLOR:</b>	White.	
<b>ODOR:</b>	Odorless or no characteristic odor.	
<b>SOLUBILITY DESCRIPTION:</b>	Soluble in water.	
<b>DENSITY/SPECIFIC GRAVITY (g/ml):</b>	N/D	TEMPERATURE (°F):
<b>BULK DENSITY:</b>	25-35 lb/ft <sup>3</sup>	
<b>VAPOR DENSITY (air=1):</b>	N/A	
<b>VAPOR PRESSURE:</b>	N/A	TEMPERATURE (°F):



**pH-VALUE, DILUTED SOLUTION:** 5.0-7.0                      **CONCENTRATION (%M):** 4%

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## 10. STABILITY AND REACTIVITY

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**STABILITY:** Normally stable.

**CONDITIONS TO AVOID:**  
Avoid heat.

**HAZARDOUS POLYMERIZATION:**  
Will not polymerize.

**POLYMERIZATION DESCRIPTION:**  
Not relevant.

**MATERIALS TO AVOID:**  
Strong oxidizing agents.

**HAZARDOUS DECOMPOSITION PRODUCTS:**  
No specific hazardous decomposition products noted.

---

## 11. TOXICOLOGICAL INFORMATION

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**TOXICOLOGICAL INFORMATION:**  
No toxicological data is available for this product.

---

## 12. ECOLOGICAL INFORMATION

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**ECOLOGICAL INFORMATION:**  
Contact M-I Environmental Affairs for ecological information.

---

## 13. DISPOSAL CONSIDERATIONS

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**WASTE MANAGEMENT:**  
This product does not meet the criteria of a hazardous waste if discarded in its purchased form. Under RCRA, it is the responsibility of the user of the product to determine at the time of disposal, whether the product meets RCRA criteria for hazardous waste. This is because product uses, transformations, mixtures, processes, etc, may render the resulting materials hazardous.  
Empty containers retain residues. All labeled precautions must be observed.

**DISPOSAL METHODS:**  
Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that containers are empty by RCRA criteria prior to disposal in a permitted industrial landfill.

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## 14. TRANSPORT INFORMATION

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**PRODUCT RQ:** N/A

**U.S. DOT:**  
**U.S. DOT CLASS:** Not regulated.

CANADIAN TRANSPORT:  
TDGR CLASS: Not regulated.

SEA TRANSPORT:  
IMDG CLASS: Not regulated.

AIR TRANSPORT:  
ICAO CLASS: Not regulated.

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## 15. REGULATORY INFORMATION

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### REGULATORY STATUS OF INGREDIENTS:

NAME:	CAS No:	TSCA:	CERCLA:	SARA 302:	SARA 313:	DSL(CAN):
Starch	9005-25-8	Yes	No	No	No	Yes
5-Chloro-2-methyl-4-isothiazolin-3-one	26172-55-4	Yes	No	No	No	Yes
2-Methyl-4-isothiazolin-3-one	2682-20-4	Yes	No	No	No	Yes

### US FEDERAL REGULATIONS:

**WASTE CLASSIFICATION:** Not a hazardous waste by U.S. RCRA criteria. See Section 13.

**REGULATORY STATUS:** This Product or its components, if a mixture, is subject to following regulations (Not meant to be all inclusive - selected regulations represented):

SECTION 313: This product does not contain toxic chemical subject to the reporting requirements of Section 313 of Title III of the Superfund Amendment and Reauthorization Act of 1986 and 40 CFR Part 372.

SARA 311 Categories:  
1: Immediate (Acute) Health Effects.

The components of this product are listed on or are exempt from the following international chemical registries:

TSCA (U.S.)  
DSL (Canada)

### STATE REGULATIONS:

**STATE REGULATORY STATUS:** This product or its components, if a mixture, is subject to following regulations (Not meant to be all inclusive - selected regulations represented):  
None.

PROPOSITION 65: This product does not contain chemicals considered by the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 as causing cancer or reproductive toxicity, and for which warnings are now required.

### CANADIAN REGULATIONS:

**REGULATORY STATUS:** This Material Safety Data Sheet has been prepared in compliance with the Controlled Product Regulations.

Canadian WHMIS Classification: Not a Controlled Product.

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## 16. OTHER INFORMATION

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NPCA HMIS HAZARD INDEX: 1 Slight Hazard  
FLAMMABILITY: 1 Slight Hazard  
REACTIVITY: 0 Minimal Hazard  
NPCA HMIS PERS. PROTECT. INDEX: E - Safety Glasses, Gloves, Dust Respirator

**USER NOTES:** N/A = Not applicable N/D = Not determined

**INFORMATION SOURCES:** OSHA Permissible Exposure Limits, 29 CFR 1910, Subpart Z, Section 1910.1000, Air Contaminants.  
ACGIH Threshold Limit Values and Biological Exposure Indices for Chemical Substances and Physical Agents (latest edition).  
Sax's Dangerous Properties of Industrial Materials, 9th ed., Lewis, R.J. Sr., (ed.), VNR, New York, New York, (1997).  
Product information provided by the commercial vendor(s).

**PREPARED BY:** Sam Hoskin/bb

**REVISION No.:** 0

**MSDS STATUS:** Approved.

**DATE:** November 8, 1999

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**DISCLAIMER:**

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We cannot make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.



## MATERIAL SAFETY DATA SHEET

MSDS NO. 10335

Trade Name: SALT GEL\*

Revision Date: 01/25/2006

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

**Trade Name:** SALT GEL\*  
**Chemical Family:** Naturally occurring mineral.  
**Product Use:** Oil well drilling fluid additive. Viscosifier.  
**Emergency Telephone (24 hr.):** 281-561-1600

**Supplied by:** M-I L.L.C.  
P.O. Box 42842  
Houston, TX 77242  
www.miswaco.com  
**Telephone Number:** 281-561-1512  
**Contact Person:** Joanne Galvan, Product Safety Specialist

**Revision Number:** 4

#### HMIS Rating

**Health:** 1\*                      **Flammability:** 0                      **Physical Hazard:** 0                      **PPE:** E

**HMIS Key:** 4=Severe, 3=Serious, 2=Moderate, 1=Slight, 0=Minimal Hazard. \*Chronic effects - See Section 11. See Section 8 for Personal Protective Equipment recommendations.

### 2. HAZARDS IDENTIFICATION

**Emergency Overview:** Caution! May cause eye, skin, and respiratory tract irritation. Long term inhalation of particulates may cause lung damage. Cancer hazard. Contains crystalline silica which may cause cancer.

#### Canadian Classification:

**UN PIN No:** Not regulated.                      **WHMIS Class:** D2A

**Physical State:** Powder.                      **Odor:** Odorless                      **Color:** Tan to grey

#### Potential Health Effects:

##### Acute Effects

**Eye Contact:** May cause mechanical irritation  
**Skin Contact:** May cause mechanical irritation.  
**Inhalation:** May cause mechanical irritation.  
**Ingestion:** May cause gastric distress, nausea and vomiting if ingested.

#### Carcinogenicity & Chronic Effects:

See Section 11 - Toxicological Information.

**Routes of Exposure:**  
**Target Organs/Medical Conditions Aggravated by Overexposure:**

Eyes. Dermal (skin) contact. Inhalation.  
Eyes. Skin. Respiratory System.

# MATERIAL SAFETY DATA SHEET

Trade Name: SALT GEL\*

MSDS NO. 10335

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## 3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS No.	Wt. %	Comments:
Attapulgite clay	12174-11-7	94 - 99	Formerly CAS 1337-76-4.
Silica, crystalline, quartz	14808-60-7	1 - 10	No comments.

## 4. FIRST AID MEASURES

<b>Eye Contact:</b>	Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.
<b>Skin Contact:</b>	Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if any discomfort continues.
<b>Inhalation:</b>	Move person to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
<b>Ingestion:</b>	Dilute with 2 - 3 glasses of water or milk, if conscious. Never give anything by mouth to an unconscious person. If signs of irritation or toxicity occur seek medical attention.
<b>General Notes:</b>	Persons seeking medical attention should carry a copy of this MSDS with them.

## 5. FIRE FIGHTING MEASURES

### Flammable Properties

<b>Flash Point: F (C):</b>	NA
<b>Flammable Limits in Air - Lower (%):</b>	NA
<b>Flammable Limits in Air - Upper (%):</b>	NA
<b>Autoignition Temperature: F (C):</b>	NA
<b>Flammability Class:</b>	NA
<b>Other Flammable Properties:</b>	ND
<b>Extinguishing Media:</b>	This material is not combustible. Use extinguishing media appropriate for surrounding fire.

### Protection Of Fire-Fighters:

**Special Fire-Fighting Procedures:** Do not enter fire area without proper personal protective equipment, including NIOSH/MSHA approved self-contained breathing apparatus. Evacuate area and fight fire from a safe distance. Water spray may be used to keep fire-exposed containers cool. Keep water run off out of sewers and waterways.

**Hazardous Combustion Products:** ND

## 6. ACCIDENTAL RELEASE MEASURES

<b>Personal Precautions:</b>	Use personal protective equipment identified in Section 8.
<b>Spill Procedures:</b>	Evacuate surrounding area, if necessary. Wet product may create a slipping hazard. Contain spilled material. Avoid the generation of dust. Sweep, vacuum, or shovel and place into closable container for disposal.
<b>Environmental Precautions:</b>	Waste must be disposed of in accordance with federal, state and local laws. Do not allow to enter sewer or surface and subsurface waters.

## 7. HANDLING AND STORAGE

<b>Handling:</b>	Put on appropriate personal protective equipment. Avoid contact with skin and eyes. Avoid generating or breathing dust. Product is slippery if wet. Use only in a well ventilated area. Wash thoroughly after handling.
------------------	---

# MATERIAL SAFETY DATA SHEET

Trade Name: **SALT GEL\***

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**Storage:**

Store in dry, well-ventilated area. Keep container closed. Store away from incompatibles. Follow safe warehousing practices regarding palletizing, banding, shrink-wrapping and/or stacking.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure Limits (TLV & PEL - 8H TWA):**

Ingredient	CAS No.	Wt. %	ACGIH TLV	OSHA PEL	Other	Notes
Attapulgite clay	12174-11-7	94 - 99	NA	NA	NA	(1)
Silica, crystalline, quartz	14808-60-7	1 - 10	0.05 mg/m <sup>3</sup>	see Table Z-3	NIOSH: 0.05 mg/m <sup>3</sup> TWA (10H day/40H wk)	(R)

**Notes**

(1) Control as an ACGIH particulate not otherwise specified (PNOS): 10 mg/m<sup>3</sup> (Inhalable); 3 mg/m<sup>3</sup> (Respirable) and an OSHA particulate not otherwise regulated (PNOR): 15 mg/m<sup>3</sup> (Total); 5 mg/m<sup>3</sup> (Respirable).

(R) Respirable fraction (ACGIH);

Table Z-3: PEL for Mineral Dusts containing crystalline silica are 10 mg/m<sup>3</sup> / (%SiO<sub>2</sub>+2) for quartz and 1/2 the calculated quartz value for cristobalite and tridymite.

**Engineering Controls:** Use appropriate engineering controls such as, exhaust ventilation and process enclosure, to ensure air contamination and keep workers exposure below the applicable limits.

**Personal Protection Equipment**

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazards present and the risk of exposure to those hazards. The PPE recommendations below are based on our assessment of the chemical hazards associated with this product. The risk of exposure and need for respiratory protection will vary from workplace to workplace and should be assessed by the user.

**Eye/Face Protection:** Dust resistant safety goggles.

**Skin Protection:** Wear appropriate clothing to prevent repeated or prolonged skin contact. Chemical resistant gloves recommended for prolonged or repeated contact. Use protective gloves made of: Nitrile. Neoprene.

**Respiratory Protection:** All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent.

If exposed to airborne particles of this product use at least a NIOSH-approved N95 half-mask disposable or re-useable particulate respirator. In work environments containing oil mist/aerosol use at least a NIOSH-approved P95 half-mask disposable or re-useable particulate respirator.

**General Hygiene Considerations:** Work clothes should be washed separately at the end of each work day. Disposable clothing should be discarded, if contaminated with product.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Color:</b>	Tan to grey
<b>Odor:</b>	Odorless
<b>Physical State:</b>	Powder.
<b>pH:</b>	9
<b>Specific Gravity (H<sub>2</sub>O = 1):</b>	2.2 - 2.4 at 68F (20C)
<b>Solubility (Water):</b>	Insoluble
<b>Flash Point: F (C):</b>	NA

# MATERIAL SAFETY DATA SHEET

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Melting/Freezing Point: ND  
Boiling Point: ND  
Vapor Pressure: NA  
Vapor Density (Air=1): NA  
Evaporation Rate: NA  
Odor Threshold(s): ND

## 10. STABILITY AND REACTIVITY

**Chemical Stability:** Stable  
**Conditions to Avoid:** Keep away from heat, sparks and flame.  
**Materials to Avoid:** Oxidizers. Hydrofluoric acid. In contact with turpentine, vegetable oil and other unsaturated organic compounds, heat may be generated when the Attapulgate is at uncommonly low free moisture levels.  
**Hazardous Decomposition Products:** For thermal decomposition products, see Section 5.  
**Hazardous Polymerization:** Will not occur

## 11. TOXICOLOGICAL INFORMATION

**Component Toxicological Data:** Any adverse component toxicological effects are listed below. If no effects are listed, no such data were found.

Ingredient	Component Toxicological Summary
Silica, crystalline, quartz	Crystalline silica is the most widely occurring of all minerals. The most common form of silica is sand. The International Agency for Research on Cancer (IARC) has designated crystalline silica in the form of quartz or cristobalite a Group 1 (carcinogenic to humans). This designation was based on an increased risk of lung cancer among crystalline silica exposed workers. IARC did note that carcinogenicity of crystalline silica in humans was not detected in all industrial circumstances studied. Further, carcinogenicity of crystalline silica may be dependent on inherent characteristics of the crystalline silica or external factors affecting its biological activity or distribution of polymorphs. (IARC Vol. 68, 1997, p. 41). The National Toxicology Program (NTP) classifies crystalline silica as "reasonably anticipated to cause cancer in humans" (6th Annual Report on Carcinogens, 1991). Long term inhalation of crystalline silica can also result in the lung disease, silicosis. Symptoms of this disease include coughing and shortness of breath. (NJ HSFS, January 1996)

### Product Toxicological Information:

Long term inhalation of particulate can cause irritation, inflammation and/or permanent injury to the lungs. Illnesses such as pneumoconiosis ("dusty lung"), pulmonary fibrosis, chronic bronchitis, emphysema and bronchial asthma may develop.

## 12. ECOLOGICAL INFORMATION

**Product Ecotoxicity Data:** Contact M-I Environmental Affairs Department for available product ecotoxicity data.  
**Biodegradation:** ND  
**Bioaccumulation:** ND  
**Octanol/Water Partition Coefficient:** ND

## 13. DISPOSAL CONSIDERATIONS

**Waste Classification:** ND

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## Waste Management:

Under U.S. Environmental Protection Agency (EPA) Resource Conservation and Recovery Act ( RCRA), it is the responsibility of the user to determine at the time of disposal, whether the product meets RCRA criteria for the hazardous waste. This is because product uses, transformations, mixtures, processes, etc., may render the resulting materials hazardous. Empty containers retain residues. All labeled precautions must be observed.

## Disposal Method:

Recover and reclaim or recycle, if practical. Should this product become a waste, dispose of in a permitted industrial landfill. Ensure that the containers are empty by the RCRA criteria prior to disposal in a permitted industrial landfill.

## 14. TRANSPORT INFORMATION

### U.S. DOT Shipping Description:

Not regulated for transportation by DOT, TDG, IMDG, ICAO/IATA.

### Canada TDG Shipping Description:

Not regulated.

### UN PIN No:

Not regulated.

### IMDG Shipping Description:

Not regulated.

### ICAO/IATA Shipping Description:

Not regulated.

## 15. REGULATORY INFORMATION

### U.S. Federal and State Regulations

**SARA 311/312 Hazard Categories:** Delayed (chronic) health hazard.

**SARA 302/304, 313; CERCLA RQ, California Proposition 65:** Note: If no components are listed below, this product is not subject to the referenced SARA and CERCLA regulations and is not known to contain a Proposition 65 listed chemical at a level that is expected to pose a significant risk under anticipated use conditions.

Ingredient	SARA 302 / TPQs	SARA 313	CERCLA RQ	CA 65 Cancer	CA 65 Dev. Tox.	CA 65 Repro. F	CA 65 Repro. M
Silica, crystalline, quartz	---	---	---	X	---	---	---

### International Chemical Inventories

Australia AICS - Components are listed or exempt from listing.

Canada DSL - Components are listed or exempt from listing.

China Inventory - Components are listed or exempt from listing.

European Union EINECS/ELINCS - Components are listed or exempt from listing.

Japan METI ENCS - Components are listed or exempt from listing.

Korea TCCL ECL - Components are listed or exempt from listing.

Philippine PICCS - Components are listed or exempt from listing.

U.S. TSCA - Components are listed or exempt from listing.

U.S. TSCA - No components are subject to TSCA 12(b) export notification requirements.

### Canadian Classification:

Controlled Products Regulations Statement: This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

### WHMIS Class:

D2A



# MATERIAL SAFETY DATA SHEET

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## 16. OTHER INFORMATION

The following sections have been revised: 1, 2, 3, 8, 16

NA - Not Applicable, ND - Not Determined.

\*A mark of M-I L.L.C.

### Disclaimer:

MSDS furnished independent of product sale. While every effort has been made to accurately describe this product, some of the data are obtained from sources beyond our direct supervision. We can not make any assertions as to its reliability or completeness; therefore, user may rely on it only at user's risk. We have made no effort to censor or conceal deleterious aspects of this product. Since we cannot anticipate or control the conditions under which this information and product may be used, we make no guarantee that the precautions we have suggested will be adequate for all individuals and/or situations. It is the obligation of each user of this product to comply with the requirements of all applicable laws regarding use and disposal of this product. Additional information will be furnished upon request to assist the user; however, no warranty, either expressed or implied, nor liability of any nature with respect to this product or to the data herein is made or incurred hereunder.

# MATERIAL SAFETY DATA SHEET

## Soda Ash

Date: November 4, 2005

### I Company Identification

Company Name: BHS Marketing / Western Briquette  
Mailing Address: P.O. Box 27955 SLC, UT 84127-0955  
Physical Address: 2320 West Indiana Ave. SLC, UT 84104  
Telephone: (801) 973-8232  
Fax: (801) 973-8838  
Emergency Number: PERS (800) 633-8253

### II Product Identification

Product Name: Soda Ash  
Product Class: 55  
Chemical Description: Sodium Carbonate, anhydrous, is a white odorless, granular material, free of contamination. Meets federal specification O-S-571 G, Type II. Meets AWWA Std.  
Cas Number: 497-19-8

### III Typical Physical Properties

Physical Appearance: White granules solid  
Odor: Odorless  
Molecular Weight: 105.99  
pH: 11.3 at 1wt/wt%  
Boiling Point: Decomposes at 1800 F  
Melting Point: 851 Deg C (1564 F)  
Specific Gravity: 2.53 at (68F)  
Solubility in Water: Soluble 7wt/wt% at (77 F)

#### **IV Reactivity Data**

Chemical Stability:	This material is stable under normal handling and storage conditions
Conditions to Avoid:	Extreme Heat
Materials to Avoid:	Aluminum, Fluorine, Humid Air, Moisture, Sulfuric Acid, Acids, Magnesium, Phosphorus Pentoxide
Hazardous Decomposition Products:	Carbon Dioxide
Hazardous Polymerization:	Will not occur
Decomposition Temperature Range:	400 Deg. C (752 Deg F)

#### **V Toxicological Information and Interpretation**

Acute	
Eye irritation:	Eye-Eye irritation, 50 mg Rabbit. Severely irritating
Skin Irritation:	Skin-Skin irritation, Rabbit. Mildly irritating
Dermal Toxicity:	No test data found for Product
Respiratory Irritation:	No test data found for Product.
Acute Inhalation Toxicity:	LC50-Lethal concentration. 50% of Test Species, 2300 mg/cu m/2hrs, rat
Acute Oral Toxicity:	LD50-Lethal Dose. 50% of Test Species, 4090 mg/kg, rat
Chronic Toxicity:	This product does not contain any substances that are considered by OSHA, NTP, IARC or ACGIH to be "probable" or "suspected" human carcinogens

#### **VII Fire and Explosion Hazard Data**

##### Effects of Overexposure:

##### Acute

Eye Contact:	Causes Irritation.
Skin Contact:	May cause redness, swelling
Ingestion:	Low acute oral toxicity. May cause nausea, vomiting, diarrhea, irritation, corrosion.
Inhalation:	May cause upper respiratory tract irritation, lung irritation
Chronic Effects:	This product does not contain any ingredient designated by IARC, NTP, ACGIH, OSHA as probable or suspected human carcinogens.

## **VIII Recommended First Aid Measures**

Eye Exposure:	Hold eyelids open and flush with a steady, gentle stream of water for at least 15 mins. Seek immediate medical attention.
Skin Exposure:	In case of contact, immediately wash with plenty of soap and water for at least 5 mins. Seek medical attention if irritation develops or persists. Remove contaminated clothing and shoes. Clean contaminated clothing and shoes before re-use.
Inhalation Exposure	Remove and assure that the victim is breathing. If breathing is difficult, administer oxygen, if available. If victim is not breathing, administer CPR (cardio-pulmonary resuscitation). Seek immediate medical attention.
Ingestion Exposure:	If victim is conscious and alert, give 1-2 glasses of water to drink. Do not give anything by mouth to an unconscious person. Seek immediate medical attention. Do not leave victim unattended. To prevent aspiration of swallowed product, lay victim on side with head lower than waist. Vomiting may occur spontaneously. If vomiting occurs and the victim is conscious, give water to further dilute the chemical.
Medical conditions possible aggravated by exposure:	Inhalation of product may aggravate existing chronic respiratory problems such as asthma emphysema or bronchitis. Skin contact may aggravate existing skin disease.
Notes to Physician:	All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

## **IX Fire Fighting Measures**

Extinguishing Media:	Not combustible. Use extinguishing methods suitable for surrounding fire.
Special Fire Fighting Procedures:	Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing. Dike area top prevent runoff and contamination of water sources. Dispose of fire control water later.
Unusual Fire and Explosion Hazard:	Not combustible

## **X Accidental Release Measures**

Evacuation Procedure & Safety:	Ventilate closed spaces before entering. Wear appropriate protective gear for situation. See personal information.
Containment of Spills:	Follow Procedure described below under Cleanup and Disposal of spill
Environmental & Regulatory Reporting:	Do not flush to drain. If spilled on the ground, the affected area should be scraped clean placed in an appropriate container for disposal. Prevent material from entering public sewer system or any waterway. Large spills should be handled according to a predetermined plan. For assistance in developing a plan contact with the Technical Service Department using the Product Information phone number.

## **XI Handling & Storage**

Handling:	Do not get in eyes. Do not breath dusts. Avoid direct or prolonged contact with skin.
Storage:	Store in area that is cool, dry, well-ventilated.

## **XII Exposure Controls/ Personal Protection**

Appropriate

Hygienic Practices:  
procedure,  
prompt

As part of good industrial, personal hygiene and safety avoid all unnecessary exposure to the product and ensure removal from eyes, skin and clothing. Maintain good housekeeping to control dust accumulations.

### **Personal Protection Equipment**

Eye Protection:

Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.

Skin Protection:

Skin contact should be minimized through use of gloves and suitable long-sleeved clothing ( i.e. shirts and pants.) Consideration must be give both to durability as well as permeation resistance.

## **XIII Ecological Information**

Acute Ecotoxicity:

Crustaceans, Daphnia magna, EC<sub>50</sub>, 48 hours, 265 mg/l  
Fishes, Lepomis macrochirus, LC<sub>50</sub> 96 hours, 300 mg/l  
Algae, Nitzscheria linearis, EC<sub>50</sub>, 5 day(s), 242 mg/l

Chronic Ecotoxicity:

Phytoplankton, EC biomass, 7 day(s), 14 mg/l

Mobility:

Considerable solubility and mobility

Degradation

Abiotic:

Water, hydrolysis. Degradation products: carbonate (pH. 10/bicarbonate (pH 6-10)/carbonic acid/carbon dioxide (ph<6))

Soil-result: N/A

Biotic:

N/A

Potential for

Bioaccumulation:

Log Po/w: Result- N/A

Other Adverse

Effects/ Comments:

Observed effects are related to alkaline properties of product. Product is not significantly hazardous for the environment.

**XIV Disposal Consideration**

Waste Treatment: Sodium Carbonate is not a listed hazardous waste under 40 CFR 261. However, state and local regulations for waste disposal may be more restrictive. Spilled product should be disposed of in an EPA-approved disposal facility in accordance with applicable national, state and local environmental laws and regulations.

Packing Treatment: Use dedicated containers where possible  
Rinse the empty containers and treat the effluent in the same way as waste  
Consult current federal, state and local regulations regarding the proper disposal of emptied containers.

RCRA Hazardous Waste: Not listed

**XV Transport Information**

Mode	DOT	IMDG	IATA
UN Number	Not a regulated hazardous material	Not a regulated hazardous material	Not a regulated hazardous material
Other	It is not recommended that ERG guide #111 be used for all non-DOT-regulated material		
STCC#	28-123-22		

**XVI Regulatory Information**

National Regulations (US)  
TSCA Inventory 8(b): Yes  
SARA Title III  
Sec. 302/303  
Extremely Hazardous  
Substances (40 CFR 355): No  
SARA Title III Sec 311/312  
(40 CFR 370): Hazard Category: Acute health hazard; Chronic health hazard. Threshold planning quantity: 10,000 lbs

SARA Title III Sec 313  
Toxic Chemical  
Emissions Reporting  
(40 CFR 372): No  
CERCLA Hazardous  
Substance (40 CFR Part 302) Listed: No  
Unlisted Substance: No  
Characteristic: N/A

State Component Listing: None identified  
National Regulations (Canada)  
Canadian DSL Registration: DSL

WHMIS Classifications: D2B—Material causing other toxic effects  
This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations, and the SDS contains all the information required by the Controlled Products Regulations.

EEC Labeling: Name of dangerous product- sodium carbonate  
Symbols Xi Irritant  
Phrases R 36 Irritating to eyes  
Phrases S (2) Keep out of reach of children  
22 Do not breath dust.  
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice

Labeling “Dangerous for the environment.” Not dangerous.

Provisions classification of WG from EU-DGXI-1/3-04-98

### **XVII Other Information**

Ratings:

NFPA (National Fire Protection Association)

Health = 2 Flammability = 0 Instability = 0 Special = None

HMIS (Hazardous Material Information system)

Health = 2 Fire = 0 Reactivity = 0 PPE = Supplied by User; dependent on local conditions

### **XVIII Additional Information**

The information in this MSDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, expressed or implied, regarding its correctness.

The conditions or methods of handling, storage, use and disposal are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage, or expense arising out of or in any way connected with handling, storage, use or disposal of the product.

\*n/a= Not Applicable



# MATERIAL SAFETY DATA SHEET

NAME OF PRODUCT: AW Hydraulic Oil ISO 46

FILE NO. 9636, 9637, 9638, 9616, 11360

MSDS DATE: December, 2009

## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

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PRODUCT NAME: AW Hydraulic Oil ISO 46  
SYNONYMS: hydraulic fluid  
PRODUCT CODES: 9616,9636,9637,9637Tray,9638,11360, CG46AWBlue

MANUFACTURER: CGF INC  
DIVISION: N/A  
ADDRESS: 317 Peoples Avenue Rockford, IL 61104 USA

EMERGENCY PHONE: 800/424-9300  
CHEMTREC PHONE: 800/424-9300  
OTHER CALLS: 815-967-4400  
FAX PHONE: 815-967-4404

PRODUCT USE: Hydraulic Fluid  
PREPARED BY: Irena Larson/Denise Brauer

SECTION 1 NOTES:

## SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

---

**INGREDIENT:** Petroleum base oils, additive package.

<u>CAS NO.</u>	<u>% WT</u>	<u>% VOL</u>	<u>SARA 313 REPORTABLE</u>
64741-88-4	75-85		None
64742-01-4	15-25		None
Proprietary Additive(s)	0.5-1.5		None

## SECTION 3: HAZARDS IDENTIFICATION

---

**EMERGENCY OVERVIEW:** This material is not considered hazardous according to OSHA criteria.

**ROUTES OF ENTRY:** Skin contact or inhalation.

### POTENTIAL HEALTH EFFECTS

**EYES:** Contact may cause mild eye irritation including stinging, watering, and redness.

**SKIN:** Contact may cause mild skin irritation including redness and a burning sensation. Prolonged or repeated contact can defat the skin, causing drying and cracking of the skin and possibly dermatitis (inflammation). No harmful effects from skin absorption are expected.

**INGESTION:** No harmful effects expected from ingestion.

**INHALATION:** No information available on acute toxicity.

**ACUTE HEALTH HAZARDS:** No

**CHRONIC HEALTH HAZARDS:** No

**MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:** Skin disorders may be aggravated by exposure.

### CARCINOGENICITY

OSHA: None      ACGIH: None      NTP: None      IARC: None  
OTHER:

SECTION 3 NOTES:

# MATERIAL SAFETY DATA SHEET

NAME OF PRODUCT: AW Hydraulic Oil ISO 46

FILE NO. 9636, 9637, 9638, 9616, 11360

MSDS DATE: December, 2009

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## SECTION 4: FIRST AID MEASURES

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**EYES:** If irritation or redness develops, flush eyes with clean water. If symptoms persist, seek medical attention.

**SKIN:** Remove contaminated shoes and clothing and cleanse affected area(s) thoroughly by washing with a mild soap and water or a waterless hand cleaner. If irritation persists, seek medical attention.

**INGESTION:** First aid is not normally required; however, if swallowed and symptoms develop, seek medical attention.

**INHALATION:** If respiratory symptoms develop, move victim away from source of exposure and into fresh air. If symptoms persist, seek medical attention.

**NOTES TO PHYSICIANS OR FIRST AID PROVIDERS:** High-pressure hydrocarbon injection injuries may produce substantial necrosis of underlying tissue despite an innocuous appearing wound. Often these injuries require emergency surgical debridement and all injuries should be evaluated by a specialist in order to assess the extent of injury.

Acute aspirations of large amounts of mineral oil-laden material may produce serious aspiration pneumonia. Patients who aspirate these oils should be followed for the development of long-term sequelae. Inhalation exposure to oil mists below current workplace exposure limits is unlikely to cause pulmonary abnormalities.

## SECTION 4 NOTES:

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## SECTION 5: FIRE-FIGHTING MEASURES

**EXTINGUISHING MEDIA:** Dry chemical, carbon dioxide, foam, or water spray is recommended.

**SPECIAL FIRE FIGHTING PROCEDURES:**

Water or foam may cause frothing of materials heated above 212 F. Carbon dioxide can displace oxygen. Use caution when applying dioxide in confined spaces.

**SPECIAL PROTECTIVE EQUIPMENT:** For fires in enclosed areas, fire fighters must use self-contained breathing apparatus.

**UNUSUAL FIRE AND EXPLOSION HAZARDS:** This material may burn, but will not ignite readily. If container is not properly cooled, it can rupture in the heat of fire.

**HAZARDOUS DECOMPOSITION PRODUCTS:** No data

**Flash Point: C(F) :** >210(410) (ASTM D-92)

**Flammable Limits (approx. % vol. in air)- LEL:** 0.9%, **UEL:** 7.0%

**NFPA HAZARD ID:** Health: 1, Flammability: 1, Reactivity: 0

---

## SECTION 6: ACCIDENTAL RELEASE MEASURES

---

**ACCIDENTAL RELEASE MEASURES:**

**Personal Precautions:**

This material may burn, but will not ignite readily. Keep all sources of ignition away from spill/release. The use of explosion-proof electrical equipment is recommended. Stay upwind and away from spill/release. Notify persons downwind of the spill/release, isolate immediate hazard area and keep unauthorized personnel out. Wear appropriate protective equipment, including respiratory protection, as conditions warrant.

**Environmental Precautions:** Stop spill/release if it can be done with minimal risk. Prevent spilled material from entering sewers, storm drains, other unauthorized drainage systems, and natural waterways. Contact appropriate agency for spills into or upon navigable waters that cause a sheen or discoloration on the water surface.

**Methods for Containment and Clean Up:**

Notify fire authorities and appropriate regulatory authorities. Immediate cleanup of any spill is recommended. Dike far ahead of spill for later recovery or disposal. Spilled material may be absorbed into an appropriate absorbent material.

---

## SECTION 7: HANDLING AND STORAGE

---

**HANDLING AND STORAGE:**

Wash thoroughly after handling. Use good personal hygiene practices and wear appropriate personal protective equipment. High pressure injection of hydrocarbon fuels, hydraulic oils or greases under the skin may have serious consequences even though no symptoms or injury may be apparent. This can happen accidentally when using high pressure equipment such as high pressure grease guns, fuel injection

# MATERIAL SAFETY DATA SHEET

NAME OF PRODUCT: AW Hydraulic Oil ISO 46

FILE NO. 9636, 9637, 9638, 9616, 11360

MSDS DATE: December, 2009

apparatus or from pinhole leaks in tubing of high pressure hydraulic oil equipment. Do not enter confined spaces such as tanks or pits without following proper entry procedures. Do not wear contaminated clothing or shoes. "Empty" containers retain residue and may be dangerous. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, or other sources of ignition. They may explode and cause injury or death. "Empty" drums should be completely drained, properly bunged, and promptly shipped to the supplier or a drum reconditioner. All containers should be disposed of in an environmentally safe manner and in accordance with governmental regulations. Use and store this material in cool, dry, well-ventilated areas away from heat and all sources of ignition. Keep container(s) tightly closed. Store only in approved containers. Keep away from any incompatible material. Protect container(s) against physical damage.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

---

Component	ACGIH	OSHA
Lubricant Base Oil-Petroleum	TWA: 5mg/m <sup>3</sup> STEL: 10mg/m <sup>3</sup> As oil mist, if generated	TWA: 5mg/m <sup>3</sup> as Oil mist, if generated

**ENGINEERING CONTROLS:** If current ventilation practices are not adequate to maintain airborne concentrations below the established exposure limits, additional engineering controls may be required.

**RESPIRATORY PROTECTION:** Where there is potential for airborne exposure above the exposure limit a NIOSH certified air purifying respirator equipped with R or P95 filters may be used. A respiratory protection program that meets or is equivalent to OSHA 29 CFR 1910.134 and ANSI Z88.2 should be followed whenever workplace conditions warrant a respirator's use. Air purifying respirators provide limited protection and cannot be used in atmospheres that exceed the maximum use concentration (MUC) as directed by regulation or the manufacturer's instructions, in oxygen deficient (less than 19.5 percent oxygen) situations, or other conditions that are immediately dangerous to life and health (IDLH).

**EYE PROTECTION:** The use of eye protection that meets or exceeds ANSI Z.87.1 is recommended to protect against potential eye contact, irritation, or injury. Depending on conditions of use, a face shield may be necessary.

**SKIN PROTECTION:** The use of gloves impervious to the specific material handled is advised to prevent skin contact. Users should check with manufacturers to confirm the performance of their products. Suggested protective materials: Nitrile

**SECTION 8 NOTES:** State, local or other agencies or advisory groups may have established more stringent limits. Consult an industrial hygienist or similar professional, or your local agencies, for further information.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

---

**APPEARANCE:** Clear Blue Liquid

**ODOR:** mild petroleum

**PHYSICAL STATE:** Liquid

**pH AS SUPPLIED:** Not applicable

**pH (Other):**

**BOILING POINT:** No data

F: >600

C: >316

**FLASH POINT:**

F: >410

C: >210

**METHOD USED:** (ASTM D-92)

**AUTOIGNITION TEMPERATURE:**

F: 671

C: 355

**MELTING POINT:** No data

F:

C:

**FREEZING POINT:** No data

F:

# MATERIAL SAFETY DATA SHEET

NAME OF PRODUCT: AW Hydraulic Oil ISO 46

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C:

VAPOR PRESSURE (mmHg): <1  
@ 20 C :< 0.1

VAPOR DENSITY (AIR = 1): >2  
@

F: 68  
C: 20

SPECIFIC GRAVITY (H2O = 1): 0.87  
@

F: 60  
C: 15.6

EVAPORATION RATE: n/a

BASIS (=1):

SOLUBILITY IN WATER: not soluble

PERCENT SOLIDS BY WEIGHT: n/a

PERCENT VOLATILE: Negligible  
BY WT/ BY VOL @

F: 68  
C: 20

VOLATILE ORGANIC COMPOUNDS (VOC): no data

WITH WATER: LBS/GAL  
WITHOUT WATER: LBS/GAL

MOLECULAR WEIGHT: no data

VISCOSITY:

200-300 SUS @ 100 Degree F  
@ 40 C cST 47.25

SECTION 9 NOTES: Data represents typical values and are not intended to be specifications.

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## SECTION 10: STABILITY AND REACTIVITY

---

STABLE

UNSTABLE

STABILITY: YES

CONDITIONS TO AVOID (STABILITY): Avoid excessive heat, formations of vapors or mists.

INCOMPATIBILITY (MATERIAL TO AVOID): Strong oxidizing agents

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: None under normal storage.

HAZARDOUS POLYMERIZATION: No

CONDITIONS TO AVOID (POLYMERIZATION): n/a

SECTION 10 NOTES:

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## SECTION 11: TOXICOLOGICAL INFORMATION

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### TOXICOLOGICAL INFORMATION:

**Carcinogenicity:** The petroleum base oils contained in this product have been highly refined by a variety of processes including solvent extraction, hydrotreating, and/or dewaxing to remove aromatics and improve performance characteristics. No components in this formulation have been identified as a carcinogen.

Component  
Lubricant Base Oil

Oral LD50  
>5g/kg

Dermal LD50  
>2g/kg

Inhalation LC50  
No data

# MATERIAL SAFETY DATA SHEET

NAME OF PRODUCT: AW Hydraulic Oil ISO 46

FILE NO. 9636, 9637, 9638, 9616, 11360

MSDS DATE: December, 2009

## SECTION 11 NOTES:

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## SECTION 12: ECOLOGICAL INFORMATION

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**ECOLOGICAL INFORMATION:** Ecotoxicological data have not been determined specifically for this product. Information given is based on knowledge of the components and the ecotoxicology of similar products.

**Acute Toxicity:** Poorly soluble mixture. May cause physical fouling of aquatic organisms. Expected to be practically non toxic: LL/EL/IL50 > 100 mg/l (to aquatic organisms) (LL/EL50 expressed as the nominal amount of product required to prepare aqueous test extract). Mineral oil is not expected to cause any chronic effects to aquatic organisms at concentrations less than 1 mg/l.

**Mobility:** Liquid under most environmental conditions. Floats on water. If it enters soil, it will adsorb to soil particles and will not be mobile.

**Persistence/degradability:** Expected to be not readily biodegradable. Major constituents are expected to be inherently biodegradable, but the product contains components that may persist in the environment.

**Bioaccumulation :** Contains components with the potential to bioaccumulate.

**Other Adverse Effects:** Product is a mixture of non-volatile components, which are not expected to be released to air in any significant quantities. Not expected to have ozone depletion potential, photochemical ozone creation potential or global warming potential

## SECTION 12 NOTES:

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## SECTION 13: DISPOSAL CONSIDERATIONS

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### WASTE DISPOSAL METHOD:

**Material Disposal:** Recover or recycle if possible. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste classification and disposal methods in compliance with applicable regulations. Do not dispose into the environment, in drains or in water courses.

**Container Disposal:** Dispose in accordance with prevailing regulations, preferably to a recognized collector or contractor. The competence of the collector or contractor should be established beforehand.

**Local Legislation:** Disposal should be in accordance with applicable regional, national, and local laws and regulations.

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## SECTION 14: TRANSPORT INFORMATION

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### U.S. DEPARTMENT OF TRANSPORTATION: Not regulated

PROPER SHIPPING NAME:

HAZARD CLASS:

ID NUMBER:

PACKING GROUP:

LABEL STATEMENT:

### WATER TRANSPORTATION: Not regulated

PROPER SHIPPING NAME:

HAZARD CLASS:

ID NUMBER:

PACKING GROUP:

LABEL STATEMENTS:

### AIR TRANSPORTATION: Not regulated

PROPER SHIPPING NAME:

HAZARD CLASS:

ID NUMBER:

PACKING GROUP:

LABEL STATEMENTS:

### OTHER AGENCIES:

## SECTION 14 NOTES:

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## SECTION 15: REGULATORY INFORMATION

---

### U.S. FEDERAL REGULATIONS

# MATERIAL SAFETY DATA SHEET

NAME OF PRODUCT: AW Hydraulic Oil ISO 46

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MSDS DATE: December, 2009

**TSCA (TOXIC SUBSTANCE CONTROL ACT):** All components of this formulation are listed on the US EPA-TSCA inventory or not regulated under TSCA.

**EU Labeling:** Product is not dangerous as defined by the European Union Dangerous Substances/Preparations Directives. EU labeling is not required.

**Governmental Inventory Status:** All components comply with TSCA, EINECS/ELINCS, AICS, METI, DSL, KOREA, and PHILIPPINES.

**CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT):** This material does not contain any chemicals subject to the reporting requirements of SARA 302 and 40 CFR 372.

**SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT):** This product contains no "EXTREMELY HAZARDOUS SUBSTANCES".

**311/312 HAZARD CATEGORIES: None**

Acute Health: No

Chronic Health: No

Fire Hazard: No

Pressure Hazard: No

Reactive Hazard: No

**313 REPORTABLE INGREDIENTS:** This material does not contain any chemicals subject to the reporting requirements of SARA 313 and 40 CFR 372.

**STATE REGULATIONS:** This material does not contain any chemicals with CERCLA Reportable Quantities.

**California Proposition 65:**

This material does not contain any chemicals which are known to the State of California to cause cancer, birth defects or other reproductive harm at concentrations that trigger the warning requirements of California Proposition 65.

**INTERNATIONAL REGULATIONS:**

**Canadian Regulations:**

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class

None

**SECTION 15 NOTES:**

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**SECTION 16: OTHER INFORMATION**

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**OTHER INFORMATION:**

**PREPARATION INFORMATION:** Issue Date: August 2009 Rev. #1

**DISCLAIMER:**

The information presented herein has been compiled from sources considered to be dependable and accurate to the best of Cutting & Grinding Fluids Inc., knowledge. However, CGF INC., makes no warranty whatsoever expressed or implied of merchantability or fitness for the particular purpose, regarding the accuracy of such data or the results to be obtained from the use thereof. Cutting & Grinding Fluids, Inc. assumes no responsibility for the injury to recipient or to the third persons or for any damage to any property and recipient assumes all such risks.

# SAFETY DATA SHEET

Lucas SAE 80W-90 Gear Oil



## Section 1. Identification

GHS product identifier : Lucas SAE 80W-90 Gear Oil  
Other means of identification : Not available.  
Product number : 10043, 10046, 10066, 10067, 10069

### Relevant identified uses of the substance or mixture and uses advised against

Lubricating oil.

Supplier's details : Lucas Oil Products, Inc  
302 North Sheridan Street  
Corona, California 92880-2067  
Toll Free: (800) 342-2512  
Tel: (951) 270-0154  
Fax: (951) 270-1902  
Website: www.LucasOil.com

Emergency telephone number (with hours of operation) : (951) 493-1149  
(951) 847-5949  
Markn@lucasoil.com

7:00A.M. to 5:00P.M. Monday thru Friday

## Section 2. Hazards identification

OSHA/HCS status : While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture : Not classified.

### GHS label elements

Signal word : No signal word.

Hazard statements : No known significant effects or critical hazards.

### Precautionary statements

General : Read label before use. Keep out of reach of children. If medical advice is needed, have product container or label at hand.

Prevention : Not applicable.

Response : Not applicable.

Storage : Not applicable.

Disposal : Not applicable.

Hazards not otherwise classified : None known.





## Section 3. Composition/information on ingredients

Substance/mixture : Mixture  
 Other means of identification : Not available.

### CAS number/other identifiers

CAS number : Not applicable.  
 Product code : Not available.

Ingredient name	%	CAS number
Lubricating oils, petroleum, c>25, hydrotreated bright stock-based	30 - 60	72623-83-7
Dec-1-ene, oligomers, hydrogenated	10 - 30	68037-01-4

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

## Section 4. First aid measures

### Description of necessary first aid measures

**Eye contact** : Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Get medical attention if irritation occurs.

**Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical attention if symptoms occur. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Get medical attention if symptoms occur.

**Ingestion** : Wash out mouth with water. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Do not induce vomiting unless directed to do so by medical personnel. Get medical attention if symptoms occur.

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

**Eye contact** : No known significant effects or critical hazards.

**Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

**Skin contact** : No known significant effects or critical hazards.

**Ingestion** : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

**Eye contact** : No known significant effects or critical hazards.

**Inhalation** : No known significant effects or critical hazards.

**Skin contact** : No known significant effects or critical hazards.

**Ingestion** : No known significant effects or critical hazards.

### Indication of immediate medical attention and special treatment needed, if necessary

**Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

**Specific treatments** : No specific treatment.

**Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)







## Section 5. Fire-fighting measures

### Extinguishing media

- Suitable extinguishing media : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media : None known.

Specific hazards arising from the chemical : No specific fire or explosion hazard.

Hazardous thermal decomposition products : Decomposition products may include the following materials:  
carbon dioxide  
carbon monoxide  
nitrogen oxides  
sulfur oxides  
metal oxide/oxides

Special protective actions for fire-fighters : No special precaution is required.

Special protective equipment for fire-fighters : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

For non-emergency personnel : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Put on appropriate personal protective equipment.

For emergency responders : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

Environmental precautions : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

### Methods and materials for containment and cleaning up

Small spill : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see Section 13). Dispose of via a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

Protective measures : Put on appropriate personal protective equipment (see Section 8).

Advice on general occupational hygiene : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.





## Section 7. Handling and storage

**Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers. Use appropriate containment to avoid environmental contamination.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

Ingredient name	Exposure limits
Lubricating oils, petroleum, c>25, hydrotreated bright stock-based	ACGIH TLV (United States, 3/2012). TWA: 5 mg/m <sup>3</sup> 8 hours. Form: Inhalable fraction NIOSH REL (United States, 6/2009). TWA: 5 mg/m <sup>3</sup> 10 hours. Form: Mist STEL: 10 mg/m <sup>3</sup> 15 minutes. Form: Mist OSHA PEL (United States, 6/2010). TWA: 5 mg/m <sup>3</sup> 8 hours.

**Appropriate engineering controls** : No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

**Environmental exposure controls** : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

### Individual protection measures

**Hygiene measures** : Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**Eye/face protection** : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: safety glasses with side-shields.

### Skin protection

**Hand protection** : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

**Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Other skin protection** : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**Respiratory protection** : Use a properly fitted, air-purifying or supplied air respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.





## Section 9. Physical and chemical properties

### Appearance

Physical state	: Liquid. [Clear.]
Color	: Amber.
Odor	: Petroleum. Sulfur.
Odor threshold	: Not available.
pH	: Not available.
Melting point	: Not available.
Boiling point	: >260°C (>500°F)
Flash point	: Closed cup: 212.77°C (415°F)
Burning time	: Not applicable.
Burning rate	: Not applicable.
Evaporation rate	: Not available.
Flammability (solid, gas)	: Not available.
Lower and upper explosive (flammable) limits	: Not available.
Vapor pressure	: Not available.
Vapor density	: Not available.
Relative density	: 0.9042
Solubility	: Negligible at 25°C
Solubility in water	: Not available.
Partition coefficient: n-octanol/water	: Not available.
Auto-ignition temperature	: Not available.
Decomposition temperature	: Not available.
SADT	: Not available.
Viscosity	: Kinematic (100°C (212°F)): 0.15 cm <sup>2</sup> /s (15 cSt)

## Section 10. Stability and reactivity

Reactivity	: No specific test data related to reactivity available for this product or its ingredients.
Chemical stability	: The product is stable.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid	: No specific data.
Incompatible materials	: Reactive or incompatible with the following materials: oxidizing materials.
Hazardous decomposition products	: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

There is no data available.

#### Irritation/Corrosion

Skin : There is no data available.





## Section 11. Toxicological information

**Eyes** : There is no data available.

**Respiratory** : There is no data available.

### Sensitization

**Skin** : There is no data available.

**Respiratory** : There is no data available.

### Mutagenicity

There is no data available.

### Carcinogenicity

There is no data available.

### Reproductive toxicity

There is no data available.

### Teratogenicity

There is no data available.

### Specific target organ toxicity (single exposure)

There is no data available. Specific target organ

toxicity (repeated exposure) There is no data available.

### Aspiration hazard

Name	Result
Lubricating oils, petroleum, c>25, hydrotreated bright stock-based Dec-1-ene, oligomers, hydrogenated	ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1

**Information on the likely routes of exposure** : Not available.

### Potential acute health effects

**Eye contact** : No known significant effects or critical hazards.

**Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.

**Skin contact** : No known significant effects or critical hazards.

**Ingestion** : No known significant effects or critical hazards.

### Symptoms related to the physical, chemical and toxicological characteristics

**Eye contact** : No known significant effects or critical hazards.

**Inhalation** : No known significant effects or critical hazards.

**Skin contact** : No known significant effects or critical hazards.

**Ingestion** : No known significant effects or critical hazards.

### Delayed and immediate effects and also chronic effects from short and long term exposure

#### Short term exposure

**Potential immediate effects** : No known significant effects or critical hazards.

**Potential delayed effects** : No known significant effects or critical hazards.

#### Long term exposure

**Potential immediate effects** : No known significant effects or critical hazards.

**Potential delayed effects** : No known significant effects or critical hazards.

### Potential chronic health effects

**General** : No known significant effects or critical hazards.

**Carcinogenicity** : No known significant effects or critical hazards.





## Section 11. Toxicological information

- Mutagenicity : No known significant effects or critical hazards.
- Teratogenicity : No known significant effects or critical hazards.
- Developmental effects : No known significant effects or critical hazards.
- Fertility effects : No known significant effects or critical hazards.

### Numerical measures of toxicity

#### Acute toxicity estimates

There is no data available.

## Section 12. Ecological information

### Toxicity

There is no data available.

### Persistence and degradability

There is no data available.

### Bioaccumulative potential

There is no data available.

### Mobility in soil

- Soil/water partition coefficient (K<sub>oc</sub>) : There is no data available.

- Other adverse effects : No known significant effects or critical hazards.

## Section 13. Disposal considerations

- Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

## Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-





## Section 14. Transport information

Environmental hazards	No.	No.	No.
Additional information	-	-	-

**Special precautions for user** : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code** : Not available.

## Section 15. Regulatory information

**U.S. Federal regulations** : TSCA 8(a) CDR Exempt/Partial exemption: Not determined  
 United States inventory (TSCA 8b): All components are listed or exempted.  
 Clean Water Act (CWA) 307: Antimony, dialkyl dithiocarbamate

**Clean Air Act Section 112 (b) Hazardous Air Pollutants (HAPs)** : Listed

**Clean Air Act Section 602 Class I Substances** : Not listed

**Clean Air Act Section 602 Class II Substances** : Not listed

**DEA List I Chemicals (Precursor Chemicals)** : Not listed

**DEA List II Chemicals (Essential Chemicals)** : Not listed

### SARA 302/304

#### Composition/information on ingredients

No products were found.

**SARA 304 RQ** : Not applicable.

### SARA 311/312

**Classification** : Not applicable.

#### Composition/information on ingredients

No products were found.

### SARA 313

	Product name	CAS number	%
Form R - Reporting requirements	Antimony, dialkyl dithiocarbamate	15890-25-2	1 - 5
Supplier notification	Antimony, dialkyl dithiocarbamate	15890-25-2	1 - 5

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

### State regulations

**Massachusetts** : None of the components are listed.

**New York** : None of the components are listed.





## Section 15. Regulatory information

- [New Jersey](#) : The following components are listed: Lubricating oils, petroleum, c>25, hydrotreated bright stock-based; Distillates (petroleum), hydrotreated heavy paraffinic; Distillates (petroleum), hydrotreated heavy naphthenic; Antimony, dialkyl dithiocarbamate
- [Pennsylvania](#) : The following components are listed: Antimony, dialkyl dithiocarbamate
- [California Prop. 65](#)  
No products were found.
- [International regulations](#)
- [International lists](#) : Australia inventory (AICS): All components are listed or exempted.  
China inventory (IECSC): All components are listed or exempted.  
Japan inventory: Not determined.  
Korea inventory: All components are listed or exempted.  
Malaysia Inventory (EHS Register): Not determined.  
New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.  
Philippines inventory (PICCS): All components are listed or exempted.  
Taiwan inventory (CSNN): Not determined.
- [Chemical Weapons Convention List Schedule I Chemicals](#) : Not listed
- [Chemical Weapons Convention List Schedule II Chemicals](#) : Not listed
- [Chemical Weapons Convention List Schedule III Chemicals](#) : Not listed

## Section 16. Other information

### [Hazardous Material Information System \(U.S.A.\)](#)

Health : 0 Flammability : 1 Physical hazards : 0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

### [National Fire Protection Association \(U.S.A.\)](#)

Health : 0 Flammability : 1 Instability : 0

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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

### [History](#)

- [Date of issue mm/dd/yyyy](#) : 12/30/2012
- [Version](#) : 1
- [Revised Section\(s\)](#) : Not applicable.
- [Prepared by](#) : KMK Regulatory Services Inc.





## Section 16. Other information

### Key to abbreviations

- : ATE = Acute Toxicity Estimate
- BCF = Bioconcentration Factor
- GHS = Globally Harmonized System of Classification and Labelling of Chemicals
- IATA = International Air Transport Association
- IBC = Intermediate Bulk Container
- IMDG = International Maritime Dangerous Goods
- LogPow = logarithm of the octanol/water partition coefficient
- MARPOL 73/78 = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution)
- UN = United Nations

### Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.







# Gulfpride® Motor Oil 10W-40

## Material Safety Data Sheet

### 1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

#### Product Identification

-----  
 Product Name: Gulfpride® Motor Oil 10W-40  
 Product Number: 330135  
 Synonyms: Passenger Car Motor Oil  
 CAS Number: Blend

#### Company Identification

-----  
 Gulf Oil LP/Nu-Tier Brands, Inc.  
 Tulsa, OK  
 TECHNICAL CONTACT NUMBER: 918-550-8026, EXT. 507  
 CHEMTREC: EMERGENCY CONTACT 1-800-424-9300

### 2. COMPOSITION/INFORMATION ON INGREDIENTS

100.0% Gulfpride® Motor Oil 10W-40

#### CONTAINING:

#### HAZARDOUS AND/OR REGULATED COMPONENTS

Chemical Name	Amount	CAS Number
ZINC ALKYL DITHIOPHOSPHATE	< 5.0 %	Proprietary

#### NON-HAZARDOUS COMPONENTS

Chemical Name	Amount	CAS Number
PETROLEUM DISTILLATES HEAVY PARAFFINIC	80.0 - 90.0 %	64742-65-0
ADDITIVES	< 15.0 %	Mixture

(See Section 8 for exposure guidelines)

(See Section 15 for regulatory information)

#### COMPOSITION COMMENT:

This product contains the following components required to be reported per the SARA Section 313: Zinc Compounds. Note: contains less than 1% as Zn.

#### HAZARDS DISCLOSURE

This product contains hazardous materials as defined by the OSHA Hazard Communication Standard 29 CFR 1910.1200.



# Gulpride® Motor Oil 10W-40

## Material Safety Data Sheet

### 3. HAZARDS IDENTIFICATION

```

***** EMERGENCY OVERVIEW *****
*
* WARNING
*
* Causes eye irritation.
*
*****

```

HMIS Rating - Health: 1  
 Flammability: 1  
 Reactivity: 0

#### POTENTIAL HEALTH EFFECTS

**EYE:**  
 Causes eye irritation.

**SKIN:**  
 Prolonged or repeated contact may cause skin irritation, local redness and swelling.

**INHALATION:**  
 High vapor concentrations are irritating to the eyes, nose, throat, and lungs.

**INGESTION:**  
 May be harmful if swallowed.

**CHRONIC EFFECTS:**  
 None reported.

**CARCINOGENICITY INFORMATION:**  
 None known.

### 4. FIRST AID MEASURES

**EYE CONTACT FIRST AID:**  
 In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention.

**SKIN CONTACT FIRST AID:**  
 Wash skin with plenty of soap and water while removing contaminated clothing and shoes. Get medical attention if irritation develops or persists. Wash clothing separately before reuse.



# Gulfpride<sup>®</sup> Motor Oil 10W-40

## Material Safety Data Sheet

### INHALATION FIRST AID:

Remove to fresh air.

If not breathing, give artificial respiration and contact a physician immediately.

### INGESTION FIRST AID:

Do NOT induce vomiting, but give one or two glasses of water to drink and get immediate medical attention. Never give anything by mouth to an unconscious person.

### NOTES TO PHYSICIAN:

Treat symptomatically.

## 5. FIRE FIGHTING MEASURES

### FLAMMABLE PROPERTIES

COC Flash Point: > 176.7 C (> 350.1 F)

Autoignition Temperature: N/A

### FLAMMABLE LIMITS IN AIR

LEL: N/A

UEL: N/A

### EXTINGUISHING MEDIA:

Carbon dioxide, foam, or dry powder. Do not use water, because this product is oil based. Water may cause frothing.

### FIRE & EXPLOSION HAZARDS:

Can burn in fire, releasing toxic vapors, fumes, and smoke.

### FIRE FIGHTING INSTRUCTIONS:

As in any fire, wear self-contained breathing apparatus pressure-demand MSHA/NIOSH (approved or equivalent) and full protective gear.

### COMBUSTION PRODUCTS:

Hazardous decomposition products are oxides of carbon and nitrogen including CO and CO<sub>2</sub>.

## 6. ACCIDENTAL RELEASE MEASURES

### SAFEGUARDS (PERSONNEL):

Eliminate all sources of ignition - heat, sparks, flame, electricity, impact and friction.



# Gulpride<sup>®</sup> Motor Oil 10W-40

## Material Safety Data Sheet

### INITIAL CONTAINMENT:

Absorb spills with inert material. Do not allow material to enter soil or surface water.

### LARGE SPILLS PROCEDURE:

Absorb spill with inert material (e.g., dry sand or earth), then place in a chemical waste container. Do not flush to sewer.

### SMALL SPILLS PROCEDURE:

Absorb spills with inert material.

### MISCELLANEOUS:

Treat or dispose of in accordance with all federal, state, and local requirements. Incineration is preferred.

## 7. HANDLING AND STORAGE

### HANDLING (PERSONNEL):

DO NOT PRESSURIZE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION; THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

Empty drums should be completely drained, properly bunged, and promptly returned to a drum reconditioner, or properly disposed of. Wash hands thoroughly after handling.

### HANDLING (PHYSICAL ASPECTS):

Secure container after each use. Store in a cool dry area.

Avoid contact with strong oxidizing agents.

### STORAGE PRECAUTIONS:

Store in a cool dry place, in a tightly closed container. Eliminate all sources of ignition - heat, sparks, flame, electricity, impact and friction.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### ENGINEERING CONTROLS:

Local exhaust ventilation may be necessary to control any air contaminants to within their TLVs during the use of this product. TLV for mineral oil is 5 mg/cubic meter.

### EYE / FACE PROTECTION REQUIREMENTS:

When splashing of the material may occur, chemical goggles and/or a face shield are recommended.



# Gulpride<sup>®</sup> Motor Oil 10W-40

## Material Safety Data Sheet

### SKIN PROTECTION REQUIREMENTS:

Where contact is likely, wear chemical resistant gloves.

### RESPIRATORY PROTECTION REQUIREMENTS:

Under normal use conditions, with adequate ventilation, no special handling equipment is required. If mists are produced, local ventilation may be required to keep exposure below limits.

### EXPOSURE GUIDELINES:

No Information Available.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

FORM .....: Liquid  
COLOR .....: Amber  
ODOR .....: Petroleum  
VAPOR DENSITY .....: Heavier than air (Air = 1)  
SOLUBILITY IN WATER ...: Nil  
SPECIFIC GRAVITY .....: 0.871 at 60 Deg F (Water = 1)  
BULK DENSITY .....: 7.25 Pounds per Gallon at 60 Deg F  
PH .....: Not applicable  
VISCOSITY .....: 13.5 cSt at 100 Deg C

## 10. STABILITY AND REACTIVITY

### STABILITY:

Stable.

### POLYMERIZATION:

Hazardous polymerization will not occur.

### INCOMPATIBILITY WITH OTHER MATERIALS:

Avoid contact with strong oxidizing agents.

### DECOMPOSITION:

In the case of a fire, oxides of carbon and zinc, hydrocarbons, fumes, and smoke may be produced. Hydrogen sulfide and alkyl mercaptans and sulfides may also be released.

## 11. TOXICOLOGICAL INFORMATION

No information available.

## 12. ECOLOGICAL INFORMATION

No information available.



# Gulfpride® Motor Oil 10W-40

## Material Safety Data Sheet

### 13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL:

Avoid disposal into waste water treatment facilities. Treat or dispose of waste material in accordance with all local, state/provincial, and national requirements. This product, if discarded, is not considered a hazardous waste.

### 14. TRANSPORTATION INFORMATION

PRODUCT LABEL .....: Gulfpride® Motor Oil 10W-40  
D.O.T. SHIPPING NAME ...: Not Regulated by DOT

### 15. REGULATORY INFORMATION

REGULATORY LISTS SEARCHED:

- |                                   |                                   |
|-----------------------------------|-----------------------------------|
| 01 = CANADIAN DISCLOSURE LIST     | 02 = CERCLA Hazardous Substances  |
| 03 = TITLE V OF THE CLEAN AIR ACT | 04 = SC Toxic Air Pollutants List |
| 05 = SARA TITLE III - SECTION 313 | 06 = SARA Title III - Section 312 |
| 07 = CA PROPOSITION 65            | 08 = RCRA Hazardous Substances    |

No information available.

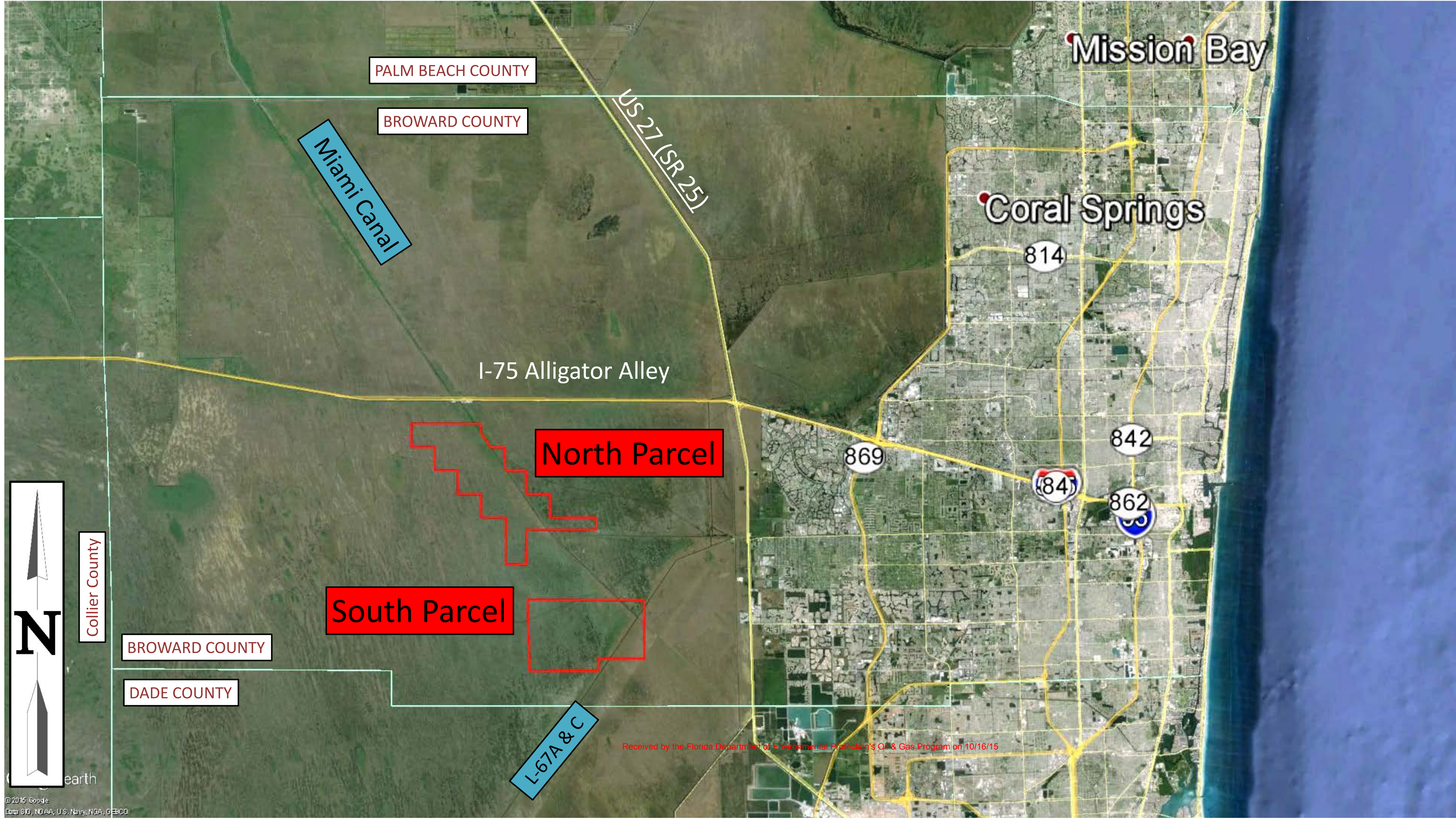
### 16. OTHER INFORMATION

REASON FOR ISSUE ...: NEW  
APPROVAL DATE .....: March 24, 2011  
SUPERCEDES DATE ....:  
RTN NUMBER .....:

\*\*\*\*\*  
 This information is furnished without warranty, expressed or implied, except that it is accurate to the best knowledge of Gulf Oil LP. The data on this sheet are related only to the specific material designated herein. Gulf Oil LP assumes no legal responsibility for use or reliance upon these data.  
 \*\*\*\*\*

\*\*\*\*\*  
 END OF MSDS  
 \*\*\*\*\*

7(a) Map depicting Kanter owned property in WCA 3



Received by the Florida Department of Environmental Protection's Oil & Gas Program on 10/16/15

**THE CAROL GROUP, INC.**

*Professional Engineers and Surveyors*

**208 Dal Hall Boulevard  
Lake Placid, FL 33852**

**Kanter 23-2  
Parcels  
Broward County, FL**

DATE:	
PROJECT NO.:	
FILE NO.:	
SCALE:	

SHEET NUMBER

**7(a)**



7(b) Central and Southern Florida Flood Control District flowage easement

Rec'd 6/17/02 SFW and  
SFWMO easement  
20000 AC

DB 711/282

10-110 July, A.D., 1950, by and between DALLAS INVESTMENT CO., a Florida corporation existing under the laws of the State of Florida, having its principal place of business in the County of Dade and State of Florida, and lawfully authorized to transact business in the State of Florida; VICTOR J. TATHAM and EARLMA A. TATHAM, his wife, parties of the first part, and CENTRAL AND SOUTHERN FLORIDA FLOOD CONTROL DISTRICT, a body corporate created by the Acts of the Florida Legislature of 1949, with its principal office in West Palm Beach, Palm Beach County, Florida, party of the second part; W I T N E S S E T H:

76, 76.01

That for and in consideration of the sum of One Dollar and other good and valuable considerations, the receipt of which is hereby acknowledged and confessed, party of the first part does hereby bargain, sell, grant and convey to the CENTRAL AND SOUTHERN FLORIDA FLOOD CONTROL DISTRICT, party of the second part, its successors or assigns, only such right, privilege, use and easement in and to the lands hereinafter described for any and all purposes necessary to the construction, maintenance and operation of any project in the interest of flood control, reclamation, conservation and allied purposes now or that may hereafter be conducted by the grantee herein, its successors or assigns, including the right to permanently or intermittently flood all or any part of the area covered hereby as a result of the said construction, maintenance, or operation, in carrying out the purposes and intents of the statutes of the State of Florida, relating to CENTRAL AND SOUTHERN FLORIDA FLOOD CONTROL DISTRICT, presently existing or that may be enacted in the future pertaining thereto. Any part or the whole thereof of the right, privilege, use and easement herein granted may be assigned for the public purposes contemplated herein by the grantee at its own option and sound discretion without approval of the grantor herein.

Such right, privilege, use and easement is given in and to the following described lands, situate, lying and being in the County of Broward and State of Florida, to-wit:

- All West of Canal less FEC R/w Section 2, Township 50-South, Range 37-East;
- All less FEC R/w Section 3, Township 50-South, Range 37-East;
- All Section 4, Township 50-South, Range 37-East;
- All Section 5, Township 50-South, Range 37-East;
- All Section 9, Township 50-South, Range 37-East;
- All Section 10, Township 50-South, Range 37-East;
- All West of Canal less FEC R/w Section 11, Township 50-South, Range 37-East;
- All West of Canal less FEC R/w Section 12, Township 50-South, Range 37-East;
- All West of Canal less FEC R/w Section 13, Township 50-South, Range 37-East;
- All Section 14, Township 50-South, Range 37-East;
- All Section 15, Township 50-South, Range 37-East;
- All Section 23, Township 50-South, Range 37-East;
- All Section 24, Township 50-South, Range 37-East;
- All Section 25, Township 50-South, Range 37-East;
- All Section 36, Township 50-South, Range 37-East;
- All Section 13, East of Canal, Township 50-South, Range 37-East;
- All Section 1, Township 50-South, Range 38-East;
- All Section 3, Township 50-South, Range 38-East;
- All West of Miami Canal Section 19, Township 50-South, Range 38-East;
- All East of Miami Canal Section 19, Township 50-South, Range 38-East;
- All Section 27, Township 50-South, Range 38-East;
- All Section 28, Township 50-South, Range 38-East;

WCA3  
#27

711 2283

N $\frac{1}{2}$  Section 29, Township 50-South, Range 38-East;  
N $\frac{1}{2}$  Section 30, West of Canal, less FEC R/w,  
Township 50-South, Range 38-East;  
V $\frac{1}{2}$  Section 30, East of Canal, less FEC R/w  
Township 50-South, Range 38-East;  
S $\frac{1}{2}$  Section 7, Township 51-South, Range 38-East;  
S $\frac{1}{2}$  Section 8, Township 51-South, Range 38-East;  
S $\frac{1}{2}$  Section 9, Township 51-South, Range 38-East;  
S $\frac{1}{2}$  Section 10, Township 51-South, Range 38-East;  
S $\frac{1}{2}$  Less FEC R/w Section 11, Township 51-South,  
Range 38-East;  
S $\frac{1}{2}$  Less FEC R/w Section 13, Township 51-South,  
Range 38-East;  
All Less FEC R/w Section 14, Township 51-South,  
Range 38-East;  
All Section 15, Township 51-South, Range 38-East;  
All Section 16, Township 51-South, Range 38-East;  
All Section 17, Township 51-South, Range 38-East;  
All Section 18, Township 51-South, Range 38-East;  
All Section 19, Township 51-South, Range 38-East;  
All Section 20, Township 51-South, Range 38-East;  
All Section 21, Township 51-South, Range 38-East;  
All Section 22, Township 51-South, Range 38-East;  
All Section 23, Township 51-South, Range 38-East;  
All Less FEC R/w Section 24, Township 51-South,  
Range 38-East;  
N $\frac{1}{2}$  Section 25, Township 51-South, Range 38-East;  
N $\frac{1}{2}$  Section 26, Township 51-South, Range 38-East;  
N $\frac{1}{2}$  Section 27, Township 51-South, Range 38-East;  
N $\frac{1}{2}$  Section 28, Township 51-South, Range 38-East;  
N $\frac{1}{2}$  Section 29, Township 51-South, Range 38-East;  
N $\frac{1}{2}$  Less FEC R/w Section 30, Township 51-South,  
Range 38-East;  
All Section 12, Township 48-South, Range 40-East;  
All Section 24, Township 48-South, Range 40-East.

It is specifically understood and agreed that the foregoing grant of the uses, rights and privileges aforesaid shall in no wise prohibit or interfere with the right of the party of the first part, its successors, assigns or lessees, to:

(a) Lease or conduct operations on the premises herein described, for the exploration or drilling for, or the developing, producing, storing or removing of oil, gas or other minerals in or under the aforesaid premises;

(b) Make such further use as will not conflict with the purposes for which this grant is given.

To exercise these rights, the grantor, its successors, assigns or lessees, and agents and employees shall have such right of ingress and egress to and from the property hereinbefore set forth, as may be necessary. It being further specifically understood and agreed that the rights retained under the provisions of this paragraph shall be exercised by the grantor, its successors, assigns or lessees, subject to any reasonable rules and regulations which the Governing Board of the CENTRAL AND SOUTHERN FLORIDA FLOOD CONTROL DISTRICT may prescribe for the efficient maintenance and operation of a public project in the interest of flood control, reclamation, conservation and allied purposes, but which shall permit the reserved rights to be exercised so that oil, gas and minerals may be developed, extracted and removed from the District in accordance with sound engineering principles.

The District hereby assumes the responsibility for 1950 taxes and years subsequent thereto, as referred to in Section 5, Chapter 25213, Laws of Florida, Acts of 1949, so long as said land in which the easement is granted remains within the Conser-

LEN 711 284

vation Areas of the Flood Control District as determined by Engineers in charge of said project.

This easement granted and conveyed to the CENTRAL AND SOUTHERN FLORIDA FLOOD CONTROL DISTRICT, shall be for the public purposes of the said District as contemplated herein and as set forth in the statutes of the State of Florida, and is subject to the condition, that in the event any or all of the lands hereinbefore described are not within the area finally determined by the Engineers in charge of said project to be required for Conservation Area purposes, then and in that event any or all of such lands not within the required area shall automatically and immediately revert to the Grantor herein and the Grantee, its successors or assigns, shall upon demand of the Grantor, its successors, heirs or assigns, execute the proper and necessary instrument to reconvey said land.

IN TESTIMONY WHEREOF, the parties hereto have caused these presents to be executed by their duly authorized officers and its corporate seal to be affixed, attested by its Secretary and the said individual parties have hereunto set their hands and seals the day and year above written.

ATTEST:

DALLAS INVESTMENT CO.

By \_\_\_\_\_ President

Emma Sondermose  
Secretary

(Seal)

Signed, sealed and delivered in the presence of us:

Hebrew Lawrence

Doris Paulson

As to Party of the First Part

(Seal)

ATTEST:

CENTRAL AND SOUTHERN FLORIDA FLOOD CONTROL DISTRICT

By \_\_\_\_\_ Chairman, Governing Board

[Signature]  
Secretary

Signed, sealed and delivered in the presence of us:

F. D. Mc-Cray

C. A. Leal, Jr.

As to Party of the Second Part

STATE OF FLORIDA  
COUNTY OF DADE

I HEREBY CERTIFY that on this 5th day of July A.D., 1950, before me personally appeared Victor J. Tatam and Emma Sondermose, President and Secretary respectively of DALLAS INVESTMENT CO., a corporation organized and existing under the laws of the State of Florida, known to me to be the persons who executed the foregoing instrument, and severally acknowledged the execution thereof to be their free act and deed as such officers, for the uses and purposes therein mentioned; and that they affixed thereto the official seal of the said corporation, and that the instrument is the act and deed of the corporation.

IN WITNESS WHEREOF, I have set my hand and official seal at Miami, said County and State the day and year last aforesaid.

Hebrew Lawrence (Seal)  
Notary Public State of Florida  
at Largo

My commission expires: \_\_\_\_\_

Notary Public, State of Florida at Largo.  
My commission expires March 21, 1952.  
Bonded by American Surety Co. of N. Y.

STATE OF FLORIDA)  
COUNTY OF DADE)

REF 711 4285

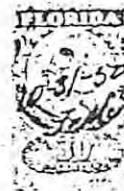
I HEREBY CERTIFY that on this 5<sup>th</sup> day of July  
A.D., 1950 before me personally appeared VICTOR J. TATHAM and  
EARLY A. TATHAM, his wife, to me well known to be the persons  
described in and who executed the foregoing instrument, and  
acknowledged before me that they executed the same freely and  
voluntarily for the purposes therein expressed.

IN WITNESS WHEREOF, I have hereunto set my hand and  
official seal at Miami, said County and State the day and year  
last aforesaid.

Henry Lawrence (Seal)  
Notary Public State of Florida  
at Large

My commission expires:

Notary - in. State of Florida at Large.  
My commission expires March 21, 1952.  
Bonded by American Surety Co. of N. Y.

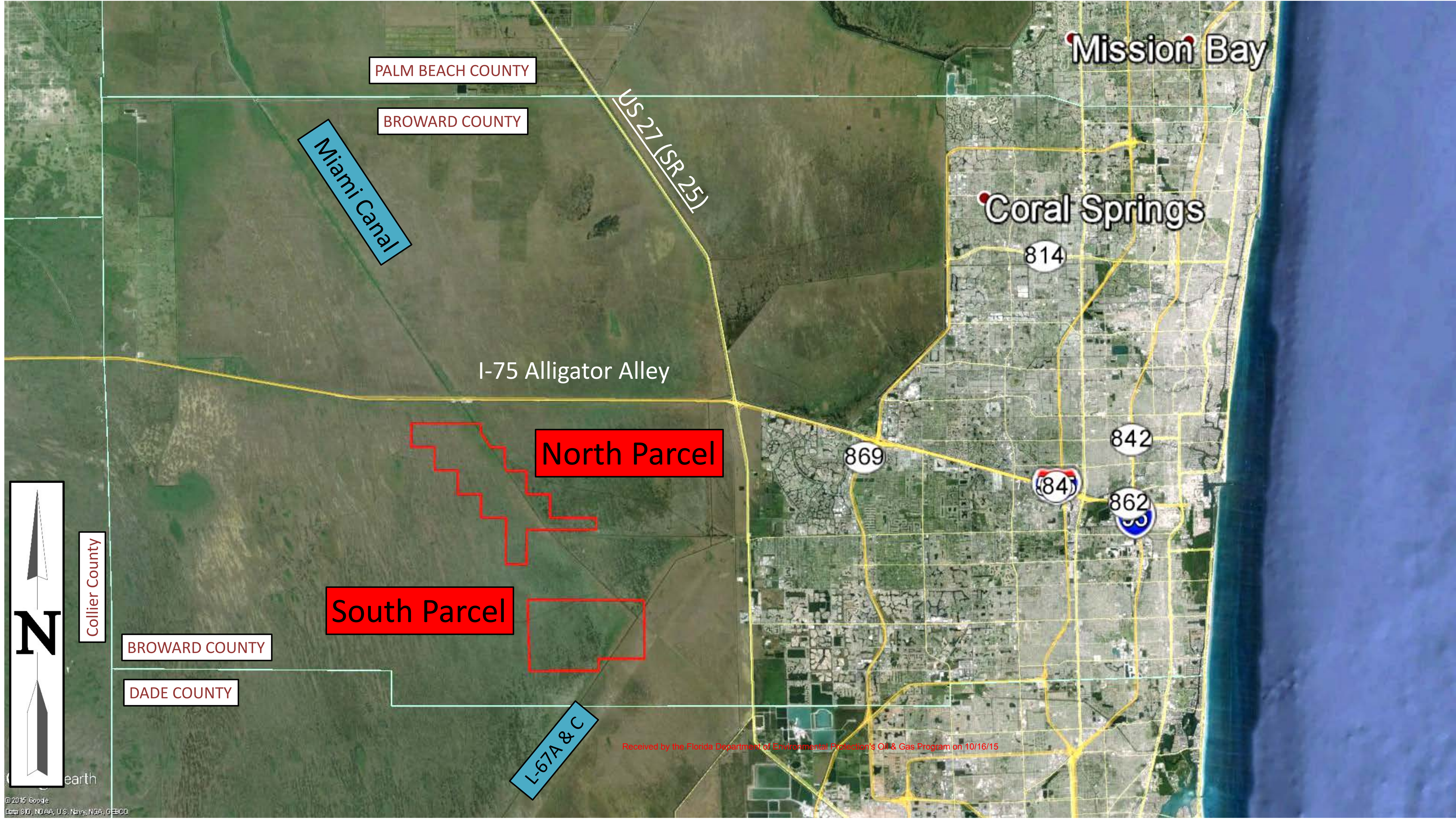


STATE OF FLORIDA  
COUNTY OF BROWARD

This instrument filed for record 2  
at Law 19 2 and recorded in book 711  
at Law on page 29 RECORD VERIFIED  
TOD CABOT, Clerk of the Circuit Court

Madeline Tarkenton  
D. 9

7.1(a) Map indicating the relative locations of the DECOMP project and the proposed oil well site



Received by the Florida Department of Environmental Protection's Oil & Gas Program on 10/16/15

**THE CAROL GROUP, INC**

*Professional Engineers and Surveyors*

**208 Dal Hall Boulevard  
Lake Placid, FL 33852**

**Kanter 23-2  
Parcels  
Broward County, FL**

DATE:	
PROJECT NO.	
FILE NO.	
SCALE	

SHEET NUMBER  
**7(a)**

7.1(b) FWCC Letter





Florida Fish  
and Wildlife  
Conservation  
Commission

Commissioners

**Brian Yablonski**  
Chairman  
Tallahassee

**Aliese P. "Liesa" Priddy**  
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**Nick Wiley**  
Executive Director

**Eric Sutton**  
Assistant Executive Director

**Jennifer Fitzwater**  
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Executive Director

**Nick Wiley**  
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(800) 955-8770 (V)

MyFWC.com

August 4, 2015

Levi Sciara  
Engineering Specialist  
Florida Department of Environmental Protection  
2600 Blair Stone Road, M.S. 3588  
Tallahassee, FL 32399  
[Levi.Sciara@dep.state.fl.us](mailto:Levi.Sciara@dep.state.fl.us)

Re: Kanter 23-1 Exploratory Oil Well, Oil and Gas Permitting Application File No. 1366 and Associated Environmental Resource Permit (ERP) Application Number 06-0336409-001, Broward County

Dear Mr. Sciara:

Florida Fish and Wildlife Conservation Commission (FWC) staff has reviewed the above-referenced application and provides the following comments for your consideration. We provide these comments as technical assistance during your review of the oil and gas application under Chapter 62C-30, Florida Administrative Code (F.A.C.), during your review of the ERP application under Chapter 373, Florida Statutes (F.S.), and in accordance with FWC's authorities under Chapter 379, F.S.

### Project Description

The applicant (Kanter) proposes to drill a well to be known as Kanter 23-1 to a depth of approximately 11,800 feet for the purposes of oil exploration. Kanter owns in fee simple approximately 20,000 acres in Water Conservation Area 3 (WCA 3) in Broward County. In 1950 an easement was granted to the Central and Southern Flood Control District for the purposes of construction, maintenance and operation of any project in the interest of flood control, reclamation, conservation and allied purposes. Kanter retained the right of ingress and egress to and from the property in order to exercise its reserved rights to develop, extract, and remove oil, gas, and minerals in accordance with sound engineering principals. Kanter, based on geologic information, proposes to construct an oil well for the purposes of exploring oil reserves on 5 acres of the 20,000-acre parcel. Drilling operations will consist of exploratory drilling and testing taking place 24 hours a day for approximately 60 to 80 days to explore the viability of the well. The applicant has also submitted an Environmental Resource Permit application which details the plans for the construction of a 5.8-acre stormwater management system to serve the proposed 5-acre oil well facility and associated works. The project also includes a 0.92-acre de-mucking spoil area with a total of 6.83 acres of wetland impacts.

The proposed well pad is located within Water Conservation Area 3B (WCA 3B), directly adjacent to the L-67A levee, approximately 1.15 miles southwest of Structure 151 within Broward County. The site currently contains freshwater marsh habitat and the applicant is proposing to purchase credits at an offsite mitigation bank to offset the proposed wetland impacts. The proposed project is expected to remain for approximately 30 years if the well is capable of producing oil. In accordance with Rule 62C-26.008, F.A.C., Operating Applications, an applicant must obtain a separate permit to operate the well. The FWC may provide additional comments if the applicant decides to apply for an operating permit. Additionally, the applicant is proposing to fully restore the pad site to its original condition at the end of the use of the pad site. The proposed project is being designed as a retention system in order to not significantly impact WCA

3 and best management practices such as construction precautions and sediment curtains will be implemented.

### Potentially Affected Resources

The application states that the proposed project is similar to the location, wetland types, and wildlife impacts of the Decompartmentalization and Sheetflow Enhancement Physical Model (DECOMP) project, which was completed by the U.S. Army Corps of Engineers (USACE). The application provided a list of threatened and endangered species and state species of concern within the project study area including: wood stork (*Mycteria Americana*, Federally Threatened [FT]), Everglade snail kite (*Rostrhamus sociabilis plumbeus*, Federally Endangered [FE]), Florida panther (*Puma concolor coryi*, FE), Eastern indigo snake (*Drymarchon corais couperi*, FT), West Indian manatee (*Trichechus manatus*, FE), American alligator (*Alligator mississippiensis*, FT because of similarity of appearance), bald eagle (*Haliaeetus leucocephalus*), Everglades mink (*Neovison vison evergladensis*, State Threatened [ST]), Southeastern American kestrel (*Falco sparverius paulus*, ST), Florida sandhill crane (*Grus canadensis pratensis*, ST), Florida black bear (*Ursus americanus floridanus*), roseate spoonbill (*Ajaja ajaja*, State Species of Special Concern [SSC]), limpkin (*Aramus guarauna*, SSC), little blue heron (*Egretta caerulea*, SSC), white ibis (*Eudocimus albus*, SSC), snowy egret (*Egretta thula*, SSC), and tricolored heron (*Egretta tricolor*, SSC).

FWC's geographic information system (GIS) analysis of the project site confirms that the project site contains the above-mentioned listed species with the exception of the following:

- West Indian manatee (*Trichechus manatus*, FE)
- Southeastern American kestrel (*Falco sparverius paulus*, ST)
- Florida sandhill crane (*Grus canadensis pratensis*, ST)

In addition, the GIS analysis of the project site found that the project site contains, is adjacent to, or occurs near:

- U.S. Fish and Wildlife Service (USFWS) consultation areas for:
  - Audubon's crested caracara (*Polyborus plancus audubonii*, Federally Threatened [FT])
  - Everglade snail kite, critical habitat (*Rostrhamus sociabilis plumbeus*, Federally Endangered [FE])
  - Florida bonneted bat (*Eumops floridanus*, FE)
- Four wood stork (*Mycteria americana*, FT) nesting colony core foraging areas (CFA). The CFA constitutes an 18.6-mile radius around the nesting colony.
- Potential habitat for state-listed species:
  - Least tern (*Sterna antillarum*, ST)

### Comments and Recommendations

FWC staff met with the applicant on July 27, 2015, to discuss the proposed project and current planning efforts regarding fish and wildlife resources. We provide the following comments and recommendations to the Florida Department of Environmental Protection (FDEP) regarding fish and wildlife resources to be considered during project permitting. The FWC has fish, wildlife,

and land management responsibilities for Water Conservation Areas (WCA) 2 and 3, which are managed as the Everglades and Francis S. Taylor Wildlife Management Area (EWMA). The EWMA contains approximately two-thirds of the remaining freshwater Everglades, and its plant communities provide important habitat for snail kites, wading birds, marsh fishes, and a variety of other wildlife species. The Everglades is a unique resource and the focus of large-scale restoration efforts. FWC staff recommends that the applicant coordinate with the South Florida Water Management District (SFWMD) and the USACE to verify that the proposed project does not impact any proposed Everglades restoration projects or planning efforts.

#### Federal Species

Wildlife surveys have not been conducted onsite, however the application provides a commitment to follow the U.S. Fish and Wildlife Service (USFWS) Eastern Indigo Snake Protection Plan, USFWS Habitat Management Guidelines for the Wood Stork in the Southeast Region Plan, and the USFWS Snail Kite Survey Protocol. Because species surveys have not yet been conducted onsite and because the location of the proposed activities may impact the listed species mentioned above, we recommend wildlife surveys for the above-listed species be conducted prior to any site development activities. We recommend that wildlife surveys follow survey protocols established by the USFWS and the FWC and surveys should be conducted by qualified individuals with recent documented experience. Basic guidance for conducting wildlife surveys may be found in the Florida Wildlife Conservation Guide (<http://myfwc.com/conservation/value/fwcg/>). Additionally, we recommend the applicant coordinate with the USFWS South Florida Ecological Services Office (ESO) at (772) 562-3909 for any necessary federal requirements.

Snail kites frequently nest in WCA 3B downstream of the project site and surveys for snail kites should be conducted before and during construction activities. We recommend the applicant coordinate with the USFWS for information regarding potential impacts to this species. Additionally, if snail kites are documented near the project site, we recommend the applicant coordinate with Tyler Beck, FWC's Snail Kite Conservation Coordinator, at either [Tyler.Beck@MyFWC.com](mailto:Tyler.Beck@MyFWC.com) or (561) 459-7072.

The project is located within the USFWS Consultation Area for the federally endangered Florida bonneted bat and potential habitat for this species may exist onsite. The University of Florida conducted acoustic surveys for bonneted bats and they have been detected around this area in 2014 and 2015. While specific guidance has not yet been approved by the USFWS for the Florida bonneted bat, we recommend the applicant take steps to determine if and how bonneted bats may be using the project area. This could include conducting acoustic surveys to determine presence of bonneted bats and searching for potential roost sites that could be used by any bat species, such as tree cavities or under dead palm fronds, within the project area. For any potential roost site that is located, FWC staff recommends the site be examined by a trained wildlife professional and the area around it should be searched for signs of bats (guano, staining around the cavity entrance, chirping sounds). If bats are found roosting within or near the project site, they should be identified to species to determine if they are Florida bonneted bats. If Florida bonneted bats are identified, the applicant should immediately contact the USFWS and also provide that occurrence information to the FWC.

#### State-listed Wading Birds

Several species of wading birds are known to nest within WCA 3 including both state-listed Species of Special Concern (little blue and tricolored herons, white ibis, snowy egret, roseate spoonbill), federally listed species (wood stork), and other species protected under the Migratory Bird Treaty Act (e.g., great egret, great blue heron). Many of these species breed from March to August, but wood storks and great egrets typically initiate nesting from January through March. Although suitable nesting substrates were not readily identifiable from satellite imagery on or

immediately adjacent to the project site, it is possible that wading birds could nest in the project area.

Wading birds often are sensitive to human disturbance. In response to disturbance, nesting birds may leave eggs and young unattended, thereby exposing eggs and young to predators, sun, and cold. Moreover, wading birds may abandon nests or even whole colonies in response to human disturbance. Typically, FWC staff recommends a 328-foot buffer around the wading bird colonies to avoid disturbance from vehicles, boats, and pedestrian traffic. However, Mueller and Glass (1988) and the Texas Land Office have suggested maintaining a 1,000-foot buffer around wading bird colonies for drilling and construction activities.

FWC staff recommends that the applicant conduct surveys for wading birds immediately prior to construction that occurs during the breeding season (January-August). Surveys should occur within 1,000 feet of the project area because wading birds in the WCAs are unaccustomed to the level of disturbance caused by construction. If active wading bird nesting colonies are discovered within 1,000 feet of the project area, FWC staff recommends that the applicant conduct construction activities outside of the breeding season. If this is not feasible, FWC staff recommends that the applicant contact FWC staff identified below for technical assistance on avoidance, minimization, and potential permitting alternatives.

#### Least Tern

Clearing associated with construction may create conditions conducive for beach-nesting bird activity. Cleared sites such as areas that have undergone surface scraping may attract ground nesting species such as least terns or other imperiled beach-nesting birds (IBNB) during nesting season. IBNB nests have been documented on a variety of disturbed sites, including construction sites (FWC 2013). Least terns deposit their eggs in shallow depressions or scrapes in the substrate, possibly lined with pebbles, grasses, or coquina shells (FWC 2013). Egg laying usually begins in late April or early May and colonies may range in size from a few breeding pairs to many hundreds (FWC 2013). FWC staff recommends the following measures to reduce nesting potential during construction:

- Conduct construction activities outside of the breeding season (generally April through August),
- Clear the site only when ready to build, and
- Avoid leaving cleared areas with little to no activity for an extended amount of time.

If nesting is observed, we recommend contacting FWC staff to discuss necessary nest buffers and potential permitting alternatives. For additional information, please refer to FWC's Breeding Bird Protocol for Florida's Seabirds and Shorebirds located at the following web address: <https://public.myfwc.com/crossdoi/shorebirds/PDF-files/BreedingBirdProtocolForFloridasSeabirdsAndShorebirds.pdf>.

#### Recreation and Access

The L-67A levee not only provides vital access to the public for recreational use, but also provides access for management and monitoring of invasive exotic wildlife. We recommend that project construction and operation activities are coordinated with FWC to ensure activities neither impede current and existing management activities nor interrupt existing public access to the WCAs. Additionally, we recommend that the boat ramps located on both ends of the L-67A levee (Everglades Holiday Park and S-333 structure) remain accessible during all aspects of planning, construction, and operation. The L-67A Canal is an important, popular, and valuable fishery. While the application states that there are no intended impacts to the L-67A Canal at this

time, please contact FWC staff identified below for technical assistance on impact avoidance and minimization measures should impacts be anticipated.

#### Wildfires

The proposed project may increase the potential for a wildfire to occur within WCA 3B and may cause adverse effects to the surrounding wetlands. We recommend the applicant include response measures should the project inadvertently cause a wildfire. Additionally, prescribed fire is a management tool used within the surrounding area. The applicant should anticipate necessary measures to be taken in the instance a prescribed fire occurs near the site and should consider how this may affect project operations. FWC staff is available to discuss safety measures and coordinate with the applicant on prescribed burning in the area should this become necessary.

#### Restoration Plan

The oil and gas application states that exploratory drilling operations will take place 24 hours a day for approximately 60 to 80 days to explore the viability of the well. If the well is capable of producing oil, the ERP application states that the project is expected to remain for approximately 30 years. If the applicant decides to apply for an operating permit for the well, the FWC may have additional comments and recommendations based on the permit application. At this time, the applicant proposes to fully restore the pad site to its original condition at the end of the project. The restoration plan will be developed in consultation with the FDEP and the SFWMD. Due to the potential life cycle of the project, aggregate material may slough from the pad into the surrounding marsh over time, degrading the water quality of the marsh and harming foraging and nesting habitat for wading birds and their prey. FWC staff recommends the applicant provide a commitment to develop and implement a restoration plan following completion of the project which would include review and approval by FWC, FDEP, and SFWMD to ensure restoration goals include habitat conditions which support the wildlife management goals of WCA 3B.

#### High Water Conditions

The WCAs have previously experienced high water conditions and may experience such conditions again in the future due to operational constraints within the system. The application did not include a contingency plan for potential high water events. We recommend that a contingency plan with assurances be developed for high water conditions in which the oil pad could become inundated, thereby increasing the risk of contamination of onsite hazardous materials into the adjacent marsh habitat. Such contamination may cause impacts to state- and federally listed species within the WCA that are dependent on water quality for essential behaviors such as foraging. Similarly, the application states that the site and equipment are designed to ensure no offsite spills can occur. In order to protect the marsh habitats consistent with the wildlife management goals of this area, we recommend the applicant develop a spill contingency plan or a pollution prevention plan with measures for cleanup of accidental spills and a list of agencies to notify should a spill occur.

#### Invasive Nonnative Vegetation

In order to minimize the risk of spreading nonnative, invasive plants into adjacent or nearby natural areas including those managed by FWC, we recommend that all equipment and vehicles used for project activities be inspected and cleaned of any seeds, vegetation, or spores prior to entering the project area. FWC staff also recommends that the well pad site and the spoil area be managed to keep invasive vegetation species from growing and spreading into the WCA.

### Summary

While the application provides general information regarding the issues identified above, it did not provide enough information for FWC staff to fully assess the potential project impacts. Inclusion of additional information as identified below would assist in our review of the application:

- Listed species surveys, location information, and avoidance measures
- Assurances that existing access to the L-67A levee will not be impacted
- Measures to address the wildfire risk proposed by the project
- Measures within the restoration plan for habitat conditions that support the wildlife management goals of the WCAs
- Measures to ensure spill prevention and a contingency plan for high water conditions
- Measures to address the risk of spreading nonnative, invasive plant species

We appreciate the opportunity to review the proposed project. FWC staff is prepared to assist FDEP staff during application review and provide technical assistance to the applicant as needed. If you need any further assistance, please do not hesitate to contact Jane Chabre either by phone at (850) 410-5367 or by email at [FWCConservationPlanningServices@MyFWC.com](mailto:FWCConservationPlanningServices@MyFWC.com). If you have specific technical questions regarding the content of this letter, please contact Marissa Krueger by phone at (561) 882-5711 or by email at [Marissa.Krueger@MyFWC.com](mailto:Marissa.Krueger@MyFWC.com).

Sincerely,



Jennifer D. Goff  
Land Use Planning Program Administrator  
Office of Conservation Planning Services

jdg/mk  
ENV 1-2-2  
Kanter 23-1 Exploratory Oil Well\_21466\_080415

cc: John Kanter, Kanter Real Estate, LLC, [jemia@bellsouth.net](mailto:jemia@bellsouth.net)  
Joseph Barber, The Carol Group, Inc., [jbarber@thecarolgroup.com](mailto:jbarber@thecarolgroup.com)  
Rosanne Clementi, Clementi Environmental Consulting, [rosanne@clementi-ec.com](mailto:rosanne@clementi-ec.com)  
Jennifer Smith, FDEP, [Jennifer.K.Smith@dep.state.fl.us](mailto:Jennifer.K.Smith@dep.state.fl.us)  
Irene Arpayoglou, FDEP, [Irene.Arpayoglou@dep.state.fl.us](mailto:Irene.Arpayoglou@dep.state.fl.us)  
Ashleigh Blackford, USFWS, [ashleigh\\_blackford@fws.gov](mailto:ashleigh_blackford@fws.gov)

### **Citation:**

Mueller, A.J., and P.O. Glass. 1988. Disturbance tolerance in a Texas waterbird colony. *Colonial Waterbirds* 11:119-122.

7.1(c) Florida panther habitat zone maps from DECOMP Report

# Panther Habitat Map

## Panther Secondary Zone

### Legend

- BiscayneAquifer\_WestLimits
- Drill 920x920
- Feature 1
- Holiday Park
- Kanter
- Well Location

Holiday Park

APPE3 Drill 920x920

WCA 3B

Google earth

© 2015 Google



10 mi



7.2 Correspondence from Florida Department of State, Division of Historical Resources

**From:** [Parsons, Timothy A.](#)  
**To:** [Sciara, Levi](#)  
**Subject:** RE: Oil & Gas Drilling Application 1366  
**Date:** Wednesday, August 05, 2015 2:49:22 PM  
**Attachments:** [image001.png](#)

---

Hi Levi,

DHR has very limited comment for this application. There are no recorded archaeological sites or other historic resources recorded within the project area, and given the environment it is unlikely that a project of this scale will lead to the disturbance of any significant resources. I recorded this project as DHR file number 2015-3766. Let me know if you have any questions.

Best,  
Tim

**Timothy Parsons, Ph.D., RPA**

Compliance Review Supervisor | Deputy State Historic Preservation Officer | Bureau of Historic Preservation | Division of Historical Resources | Florida Department of State | 500 South Bronough Street | Tallahassee, Florida 32399 | [850.245.6333](tel:850.245.6333) | [1.800.847.7278](tel:1.800.847.7278) | Fax: [850.245.6439](tel:850.245.6439) | [dos.myflorida.com/historical](http://dos.myflorida.com/historical)

---

**From:** Sciara, Levi [mailto:Levi.Sciara@dep.state.fl.us]  
**Sent:** Wednesday, August 05, 2015 11:29 AM  
**To:** Parsons, Timothy A.  
**Subject:** FW: Oil & Gas Drilling Application 1366

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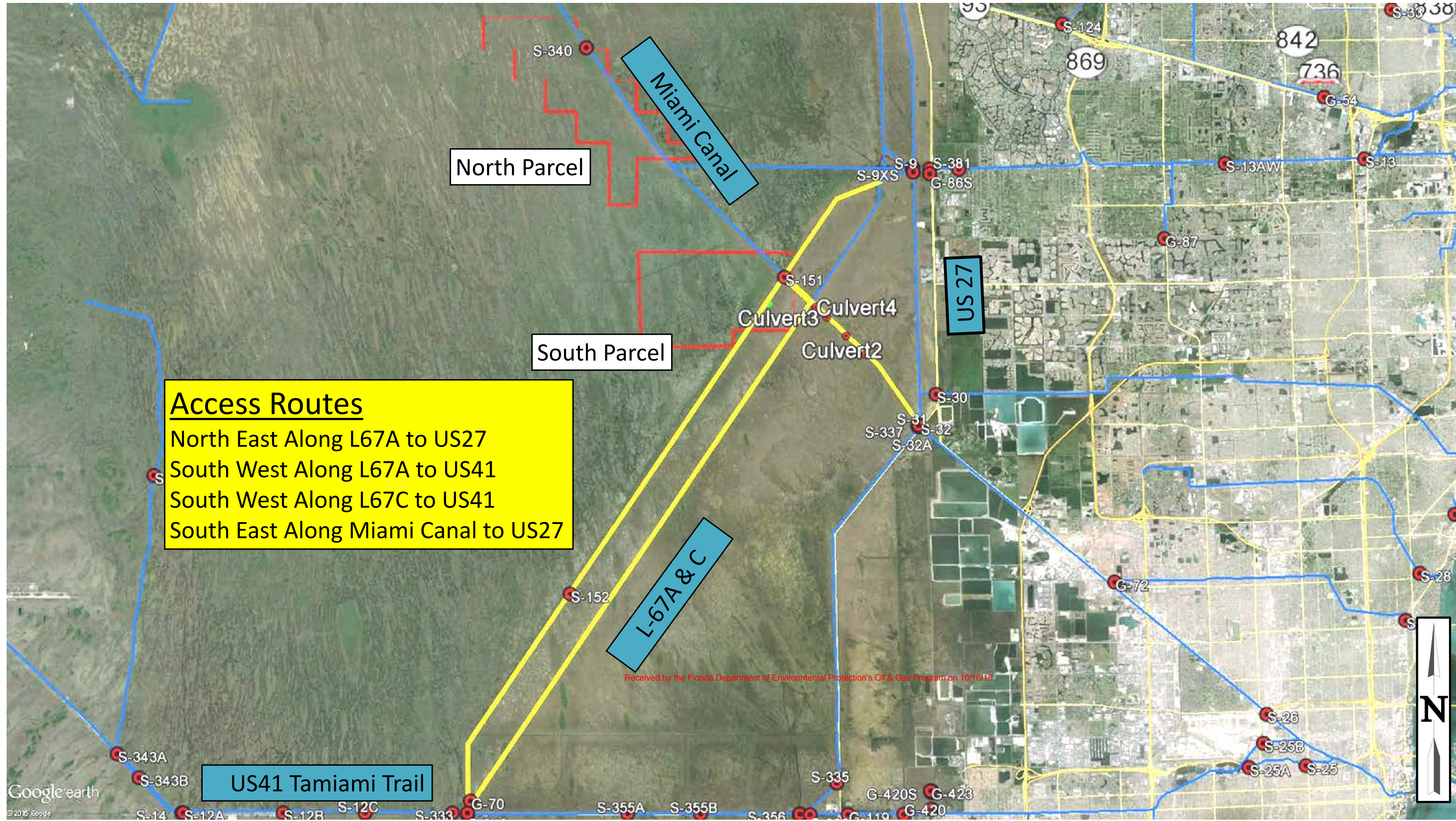
**From:** Sciara, Levi  
**Sent:** Monday, July 13, 2015 12:06 PM  
**To:** Timothy.Parsons@dos.myflorida.com; mary.glowacki@dos.myflorida.com; McCall, Cheryl; Smith, Jennifer K.; karsmith@sfwmd.gov; Marissa.Krueger@MyFWC.com; richard.mospens@MyFWC.com; jhalsey@broward.org  
**Cc:** Taylor, David M.  
**Subject:** Oil & Gas Drilling Application 1366

On Wednesday, July 8, 2015, The Oil & Gas Program of the Florida Department of Environmental Protection (Department) received a drilling application from Kanter Corporation of Florida, Inc., for the construction of a new, exploratory oil well and well pad. The proposed well and pad would be located on privately-owned land located within Water Conservation Area 3B in Broward County.

The Department is sending you a copy of the permit application to make certain you are aware of the proposed activity, and asks that you send us questions or comments that you believe are relevant to our permitting review.

The drilling application (assigned permit No. 1366) can be viewed at:

## 8.1 Access routes



**Access Routes**  
 North East Along L67A to US27  
 South West Along L67A to US41  
 South West Along L67C to US41  
 South East Along Miami Canal to US27

**THE CAROL GROUP, INC**  
 Professional Engineers and Surveyors  
 208 Dal Hall Boulevard  
 Lake Placid, FL 33852

**Kanter 23-2**  
**Site Access Routes**  
**Broward County, FL**

DATE:	PROJECT NO.
	FILE NO.
	SCALE

SHEET NUMBER  
**8**

## 14.1 Cementing plan

**HALLIBURTON**

**KANTER Real Estate LLC**

2601 Bayshore Drive

Suite 1450

Miami, FL 33133

Kanter 23-2

BROWARD County, FL, US

**Cement Services Cost Estimate**

OPERATOR: Kanter Real Estate LLC

Proposal 176842-NC - Version 1.1

October 7, 2015

Submitted by:

Jim Cerra

1384 Sandersville/Sharon Rd

Sandersville, MS - 39477

601-649-9290

**HALLIBURTON**

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*Halliburton appreciates the opportunity to present this cost estimate and looks forward to being of service to you.*

## 1 Foreword

Enclosed is our cost estimate for cementing the casing strings in the referenced well. The information in this cost estimate includes well data, calculations, materials requirements, and cost estimates. This cost estimate is based on information from our field personnel and previous cementing services in the area.

**The selection and use of non-Halliburton plugs and casing attachments often compromises the holistic approach and may jeopardize the overall objective for effective zonal isolation. Furthermore, Halliburton is not involved in the design, manufacture or use of plugs and casing attachments supplied by other manufacturers and assumes no liability for their installation and operation. For this reason we recommend Halliburton plugs and casing attachments be used when Halliburton performs any zonal isolation operation.**

Halliburton Energy Services recognizes the importance of meeting society's needs for health, safety, and protection of the environment. It is our intention to proactively work with employees, customers, the public, governments, and others to use natural resources in an environmentally sound manner while protecting the health, safety, and environmental processes while supplying high quality products and services to our customers.

We appreciate the opportunity to present this cost estimate for your consideration and we look forward to being of service to you. Our Services for your well will be coordinated through the Service Center listed below. If you require any additional information or additional designs, please feel free to contact myself or our field representative listed below.

Service Center: Sandersville, MS - Kilgore, TX - Bossier City, LA  
Caldwell, TX

Phone Number: 903-986-5096

Service Coordinators: David Sage  
Johnny Mize  
Kevin Shows  
David Ives  
Gary Robinson



## 2 Surface Casing

### 2.1 Job Information Surface Casing

Job Criticality Status: GREEN

Well Name: Kanter 23 -2

Well #: 1

17-1/2" Open Hole

0 - 1800 ft (MD)

Inner Diameter

17.5 in

Excess Factor

100 %

13-3/8" Surface Casing

0 - 1800 ft (MD)

Outer Diameter

13.375 in

Inner Diameter

12.615 in

Linear Weight

54.5 lbm/ft

Shoe Joint Length

40 ft

## 2.2 Estimated Calculations Surface Casing

### Stage 1

CEMENT: (1640 ft fill)		
1640 ft * 0.6946 ft <sup>3</sup> /ft * 100 %	= 2278.41 ft <sup>3</sup>	
Halliburton Light Standard	= 2278.41 ft <sup>3</sup>	
	= 405.8 bbl	
Total Lead	= 1013.97 sack	
CEMENT: (160 ft fill)		
160 ft * 0.6946 ft <sup>3</sup> /ft * 100 %	= 222.28 ft <sup>3</sup>	
Standard Cement	= 222.28 ft <sup>3</sup>	
	= 39.6 bbl	
Shoe Joint Volume: ( 40 ft fill )		
40 ft * 0.868 ft <sup>3</sup> /ft	= 34.72 ft <sup>3</sup>	
	= 6.2 bbl	
Tail plus shoe joint	= 257.15 ft <sup>3</sup>	
	= 45.8 bbl	
Total Tail	= 199.96 sack	
Total Pipe Capacity:		
1800 ft * 0.868 ft <sup>3</sup> /ft	= 1562.34 ft <sup>3</sup>	
	= 278.3 bbl	
Displacement Volume to Shoe Joint:		
Capacity of Pipe - Shoe Joint	= 278.3 bbl - 6.2 bbl	
	= 272.1 bbl	

## 2.3 Job Volume Estimates Surface Casing

### Stage 1

Fluid 1: Lead Slurry

EXTENDACEM (TM) SYSTEM

4 % Bentonite

3 % Salt

Fluid Weight: 12 lbm/gal  
Slurry Yield: 2.247 ft<sup>3</sup>/sack  
Total Mixing Fluid: 12.8 Gal/sack  
Top Of Fluid: 0 ft  
Calculated Fill: 1640 ft  
Liquid Volume: 405.8 bbl  
Calculated sack: 1013.98 sack  
Proposed sack: 1020 sack

Fluid 2: Tail Slurry

Standard Cement

94 lbm Standard Cement

Fluid Weight: 15 lbm/gal  
Slurry Yield: 1.286 ft<sup>3</sup>/sack  
Total Mixing Fluid: 6.04 Gal/sack  
Top Of Fluid: 1640 ft  
Calculated Fill: 160 ft  
Liquid Volume: 45.8 bbl  
Calculated sack: 199.85 sack  
Proposed sack: 200 sack

Fluid 3: Water Spacer

Estimated Displacement

Fluid Density: 8.34 lbm/gal  
Liquid Volume: 272.1 bbl

Fluid 4: Top Off Annulus

Standard Cement

94 lbm Standard Cement

2 % Calcium Chloride, Pellet

Fluid Weight: 15 lbm/gal  
Slurry Yield: 1.317 ft<sup>3</sup>/sack  
Total Mixing Fluid: 6.22 Gal/sack  
Liquid Volume: 46.9 bbl  
Calculated sack: 0 sack  
Proposed sack: 200 sack

## 2.4 Volume Estimate Table Surface Casing

**Calculations are used for volume estimation. Well conditions will dictate final cement job design.**

### Stage 1

Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Estimated Avg Rate	Downhole Volume
1	CEMENT	Halliburton Light Standard	12		1020 sack
2	CEMENT	Standard Cement	15		200 sack
3	SPACER	Estimated Displacement	8.34		272.1 bbl
4	CEMENT	Standard Top Out Cement	15		200 sack

NOTE: These slurries and spacers will require lab testing. The additives and concentrations are estimates based on field experience in the area and may need to be modified prior to the job. The proposed spacer is designed to be generally compatible with water base mud systems. Compatibility testing with field mud samples used may indicate changes in the additive package and the related costs.

### 3 Intermediate Casing

#### 3.1 Job Information Intermediate Casing

Job Criticality Status: GREEN

Well Name: Kanter 23 -2

Well #: 1

13-3/8" Surface Casing 0 - 1800 ft (MD)

Outer Diameter	13.375 in
Inner Diameter	12.615 in
Linear Weight	54.5 lbm/ft

12-1/4" Open Hole 1800 - 3800 ft (MD)

Inner Diameter	12.25 in
----------------	----------

9-5/8" Intermediate Casing 0 - 3800 ft (MD)

Outer Diameter	9.625 in
Inner Diameter	8.835 in
Linear Weight	40 lbm/ft
Shoe Joint Length	40 ft

### 3.2 Estimated Calculations Intermediate Casing

#### Stage 1

CEMENT: (668 ft fill)

$$\begin{aligned} 668 \text{ ft} * 0.3132 \text{ ft}^3/\text{ft} * 100 \% &= 418.2 \text{ ft}^3 \\ \text{Halliburton Light Standard} &= 418.2 \text{ ft}^3 \\ &= 74.5 \text{ bbl} \\ \text{Total Lead} &= 200.04 \text{ sack} \end{aligned}$$

CEMENT: (321 ft fill)

$$\begin{aligned} 321 \text{ ft} * 0.3132 \text{ ft}^3/\text{ft} * 100 \% &= 200.77 \text{ ft}^3 \\ \text{Premium Cement} &= 200.77 \text{ ft}^3 \\ &= 35.8 \text{ bbl} \end{aligned}$$

Shoe Joint Volume: ( 40 ft fill )

$$\begin{aligned} 40 \text{ ft} * 0.4257 \text{ ft}^3/\text{ft} &= 17.03 \text{ ft}^3 \\ &= 3 \text{ bbl} \end{aligned}$$

$$\begin{aligned} \text{Tail plus shoe joint} &= 217.85 \text{ ft}^3 \\ &= 38.8 \text{ bbl} \end{aligned}$$

$$\text{Total Tail} = 200.04 \text{ sack}$$

Total Pipe Capacity:

$$\begin{aligned} 1800 \text{ ft} * 0.4257 \text{ ft}^3/\text{ft} &= 766.33 \text{ ft}^3 \\ 2000 \text{ ft} * 0.4257 \text{ ft}^3/\text{ft} &= 851.47 \text{ ft}^3 \\ &= 288.1 \text{ bbl} \end{aligned}$$

Displacement Volume to Shoe Joint:

$$\begin{aligned} \text{Capacity of Pipe - Shoe Joint} &= 288.1 \text{ bbl} - 3 \text{ bbl} \\ &= 285.1 \text{ bbl} \end{aligned}$$

### 3.3 Job Volume Estimates Intermediate Casing

#### Stage 1

Fluid 1: Lead Slurry

EXTENDACEM (TM) SYSTEM

0.10 % HALAD-766

Fluid Weight: 12 lbm/gal  
Slurry Yield: 2.091 ft<sup>3</sup>/sack  
Total Mixing Fluid: 11.9 Gal/sack  
Top Of Fluid: 2812 ft  
Calculated Fill: 668 ft  
Liquid Volume: 74.5 bbl  
Calculated sack: 200 sack  
Proposed sack: 200 sack

Fluid 2: Tail Slurry

Premium Cement

94 lbm Premium Cement

Fluid Weight: 16.2 lbm/gal  
Slurry Yield: 1.089 ft<sup>3</sup>/sack  
Total Mixing Fluid: 4.55 Gal/sack  
Top Of Fluid: 3479 ft  
Calculated Fill: 321 ft  
Liquid Volume: 38.8 bbl  
Calculated sack: 200 sack  
Proposed sack: 200 sack

Fluid 3: Water Spacer

Estimated Displacement

Fluid Density: 8.34 lbm/gal  
Liquid Volume: 285.1 bbl

### 3.4 Volume Estimate Table Intermediate Casing

**Calculations are used for volume estimation. Well conditions will dictate final cement job design.**

#### Stage 1

Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Estimated Avg Rate	Downhole Volume
1	CEMENT	Halliburton Light Standard	12		200 sack
2	CEMENT	Premium Cement	16.2		200 sack
3	SPACER	Estimated Displacement	8.34		285.1 bbl

NOTE: These slurries and spacers will require lab testing. The additives and concentrations are estimates based on field experience in the area and may need to be modified prior to the job. The proposed spacer is designed to be generally compatible with water base mud systems. Compatibility testing with field mud samples used may indicate changes in the additive package and the related costs.



## 4 Production Casing

### 4.1 Job Information Production Casing

Job Criticality Status: GREEN

Well Name: Kanter 23-2

Well #: 1

9-5/8" Intermediate Casing

0 - 3800 ft (MD)

Outer Diameter

9.625 in

Inner Diameter

8.835 in

Linear Weight

40 lbm/ft

8-1/2" Open Hole

3800 - 11800 ft (MD)

Inner Diameter

8.5 in

5-1/2" Production Casing

0 - 11800 ft (MD)

Outer Diameter

5.5 in

Inner Diameter

4.892 in

Linear Weight

17 lbm/ft

Shoe Joint Length

80 ft

## 4.2 Estimated Calculations Production Casing

### Stage 1

#### SPACER: (490 ft fill)

$$\begin{aligned} 490 \text{ ft} * 0.2291 \text{ ft}^3/\text{ft} * 0 \% &= 112.29 \text{ ft}^3 \\ \text{Total Spacer} &= 112.29 \text{ ft}^3 \\ &= 20 \text{ bbl} \end{aligned}$$

#### CEMENT: (1207 ft fill)

$$\begin{aligned} 1207 \text{ ft} * 0.2291 \text{ ft}^3/\text{ft} * 0 \% &= 276.6 \text{ ft}^3 \\ \text{HTLD Cement} &= 276.6 \text{ ft}^3 \\ &= 49.3 \text{ bbl} \\ \text{Total Lead} &= 150.11 \text{ sack} \end{aligned}$$

#### CEMENT: (2495 ft fill)

$$\begin{aligned} 2495 \text{ ft} * 0.2291 \text{ ft}^3/\text{ft} * 0 \% &= 571.56 \text{ ft}^3 \\ \text{Premium Cement} &= 571.56 \text{ ft}^3 \\ &= 101.8 \text{ bbl} \end{aligned}$$

#### Shoe Joint Volume: ( 80 ft fill )

$$\begin{aligned} 80 \text{ ft} * 0.1305 \text{ ft}^3/\text{ft} &= 10.44 \text{ ft}^3 \\ &= 1.9 \text{ bbl} \end{aligned}$$

$$\begin{aligned} \text{Tail plus shoe joint} &= 582.23 \text{ ft}^3 \\ &= 103.7 \text{ bbl} \end{aligned}$$

$$\text{Total Tail} = 400.16 \text{ sack}$$

#### Total Pipe Capacity:

$$\begin{aligned} 8000 \text{ ft} * 0.1305 \text{ ft}^3/\text{ft} &= 1044.22 \text{ ft}^3 \\ 3800 \text{ ft} * 0.1305 \text{ ft}^3/\text{ft} &= 496 \text{ ft}^3 \\ &= 274.3 \text{ bbl} \end{aligned}$$

#### Displacement Volume to Shoe Joint:

$$\begin{aligned} \text{Capacity of Pipe - Shoe Joint} &= 274.3 \text{ bbl} - 1.9 \text{ bbl} \\ &= 272.5 \text{ bbl} \end{aligned}$$

### 4.3 Job Volume Estimates Production Casing

#### Stage 1

Fluid 1: Rheologically Enhanced Spacer

Mud Flush

990 gal/Mgal FRESH WATER

200 lbm/Mgal SAPP - 50 LB BAG

Fluid Density: 8.4 lbm/gal

Liquid Volume: 20 bbl

Fluid 2: Lead Slurry

THERMACEM (TM) SYSTEM

10 lbm SS-200

3 % Potassium Chloride

0.40 % HALAD-766

0.20 % HR-7

Fluid Weight: 12.8 lbm/gal

Slurry Yield: 1.844 ft<sup>3</sup>/sack

Total Mixing Fluid: 8.76 Gal/sack

Top Of Fluid: 8097 ft

Calculated Fill: 1207 ft

Liquid Volume: 49.3 bbl

Calculated sack: 150 sack

Proposed sack: 150 sack

Fluid 3: Tail Slurry

Premium Cement

94 lbm Premium Cement

35 % SS-200

3 % Potassium Chloride

0.70 % Halad(R)-322

0.10 % FWCA

0.15 % HR-7

Fluid Weight: 16.2 lbm/gal

Slurry Yield: 1.455 ft<sup>3</sup>/sack

Total Mixing Fluid: 5.65 Gal/sack

Top Of Fluid: 9305 ft

Calculated Fill: 2495 ft

Liquid Volume: 103.7 bbl

Calculated sack: 400 sack

Proposed sack: 400 sack

Fluid 4: Water Spacer

Estimated Displacement

Fluid Density: 8.34 lbm/gal

Liquid Volume: 272.5 bbl

## 4.4 Volume Estimate Table Production Casing

**Calculations are used for volume estimation. Well conditions will dictate final cement job design.**

### Stage 1

Fluid #	Fluid Type	Fluid Name	Surface Density lbm/gal	Estimated Avg Rate	Downhole Volume
1	SPACER	Mud Flush	8.4		20 bbl
2	CEMENT	HTLD Cement	12.8		150 sack
3	CEMENT	Premium Cement	16.2		400 sack
4	SPACER	Estimated Displacement	8.34		272.5 bbl

NOTE: These slurries and spacers will require lab testing. The additives and concentrations are estimates based on field experience in the area and may need to be modified prior to the job. The proposed spacer is designed to be generally compatible with water base mud systems. Compatibility testing with field mud samples used may indicate changes in the additive package and the related costs.

Mtrl Nbr	Description	Qty	UOM	Unit Price	Gross Amt	Net Amount
<b>Optional Charge</b>						
16092	ADDITIONAL HOURS (PUMPING EQUIPMENT), ZI HR/DAY/WEEK/MTH/YEAR/JOB/RUN HOURS	1.00 H 1	EA	1,139.00	1,139.00	<b>740.35</b>
10	FOOD AND LODGING, ZI NUMBER OF PERSONNEL ON JOB	1.00 1	DAY	653.00	653.00	<b>424.45</b>
756221	CMT RNTL BULK TRUCK ONSITE 0-8 HRS	1.00	EA	1,568.00	1,568.00	<b>1,019.20</b>
802332	CMT STBY UNIT 1ST 8 HR CSG JOB	1.00	UN	10,000.00	10,000.00	<b>6,500.00</b>

**Primary Plant:** Sandersville, MS, USA      **Price Book Ref:** 29 - SOUTHEAST  
**Secondary Plant:** Sandersville, MS, USA      **Price Date:** 6/30/2015

## 5 Conditions

The cost in this analysis is good for the materials and/or services outlined within and shall be valid for 30 days from the date of this proposal. In order to meet your needs under this proposal with a high quality of service and responsive timing, Halliburton will be allocating limited resources and committing valuable equipment and materials to your area of operations. Accordingly, the discounts reflected in this proposal are available only for materials and services awarded on a first-call basis. Alternate pricing may apply in the event that Halliburton is awarded work on any basis other than as a first-call provider.

The unit prices stated in the proposal are based on our current published prices. The projected equipment, personnel, and material needs are only estimates based on information about the work presently available to us. At the time the work is actually performed, conditions then existing may require an increase or decrease in the equipment, personnel, and/or material needs. Charges will be based upon unit prices in effect at the time the work is performed and the amount of equipment, personnel, and/or material actually utilized in the work. Taxes, if any, are not included. Applicable taxes, if any, will be added to the actual invoice.

It is understood and agreed between the parties that with the exception of the subject discounts, all services performed and equipment and materials sold are provided subject to Halliburton's General Terms and Conditions contained in our current price list, (which include LIMITATION OF LIABILITY and WARRANTY provisions), and pursuant to the applicable Halliburton Work Order Contract (whether or not executed by you), unless a Master Service and/or Sales Contract applicable to the services, equipment, or materials supplied exists between your company and Halliburton, in which case the negotiated Master Contract shall govern the relationship between the parties. A copy of the latest version of our General Terms and Conditions is available from your Halliburton representative or at: <http://www.halliburton.com/terms> for your convenient review, and we would appreciate receiving any questions you may have about them. Should your company be interested in negotiating a Master Contract with Halliburton, our Law Department would be pleased to work with you to finalize a mutually agreeable contract. In this connection, it is also understood and agreed that Customer will continue to execute Halliburton usual field work orders and/or tickets customarily required by Halliburton in connection with the furnishing of said services, equipment, and materials.

Any terms and conditions contained in purchase orders or other documents issued by the customer shall be of no effect except to confirm the type and quantity of services, equipment, and materials to be supplied to the customer.

If customer does not have an approved open account with Halliburton or a mutually executed written contract with Halliburton, which dictates payment terms different than those set forth in this clause, all sums due are payable in cash at the time of performance of services or delivery of equipment, products, or materials. If customer has an approved open account, invoices are payable on the twentieth day after date of invoice.

Customer agrees to pay interest on any unpaid balance from the date payable until paid at the highest lawful contract rate applicable, but never to exceed 18% per annum. In the event Halliburton employs an attorney for collection of any account, customer agrees to pay attorney fees of 20% of the unpaid account, plus all collection and court costs.

## 14.2 Casing program

# **Century Oil Co., Inc.**



## **Kanter Real Estate, LLC**

Kanter 23-2

Broward County, FL, US

## **CASING PLAN**

Prepared By:

Ed Pollister

P.O. Box 765

Chokoloskee, FL 34138

239-695-2276



**Kanter 23-2**

**CASING PROGRAM**

	<u>Depth(MD)</u>	<u>Depth (TVD)</u>	<u>Hole Size</u>	<u>Casing Size</u>	<u>WT (ppf)</u>	<u>Grade</u>	<u>Thread</u>
Conductor	200'	200'	Driven	24"	½" wt	Struc.	PE
Surface	1,800'	1,800'	17 ½"	13 3/8"	54.5#	J-55	BT&C
Intermediate	3,800'	3,800'	12 ¼"	9 5/8"	47#	L-80	ST&C
Production	11,800'	11,800'	8 ½"	7"	26#	L-80	LT&C
Option	11,800'	11,800'	8 ½"	5 ½"	17#	L-80	LT&C

**CASING SPECIFICATIONS**

<u>Casing Size</u>	<u>WT(#/ft)</u>	<u>Grade</u>	<u>Thread</u>	<u>Internal Yield</u>	<u>Collapse</u>	<u>Jt Strength</u>
13 3/8"	54.5#	J55	ST&C	2730	1130	514,000
9 5/8"	47#	L80	LT&C	6870	4760	893,000
7"	26#	L80	LT&C	7240	5410	511,000
5 ½"	17#	L80	LT&C	7740	6290	338,000

**ANTICIPATED FORMATIONS**

<u>FORMATION</u>	<u>SUBSEA</u>	<u>MD</u>	<u>TVD</u>	<u>EST PORE PRS (EMW-PPG)</u>
Boulder-Top		2,000'	2,000'	
Boulder – Base		3,200'	3,200'	
Sunniland		11,300'	11,300'	9.1
Rubble Zone		11,500'	11,500'	9.1
Punta Gorda		11,600'	11,600'	9.1

**Offset Wells Permit #'s:**

1169  
129  
1167

20. Resume of Ed Pollister, President of Century Oil Co., Inc., President of Pollister Drilling, President of Oil Tech Services

**Edward B. Pollister III**  
**PO Box 370 Everglades City, Florida 34139**  
**(231) 631-4721 (cell)**

**Experience:**

Cactus Drilling	Daylight Driller (MI)	1973-1976
Shell Oil Company	Drilling Tech/Foreman (MI)	1976-1978
Reef Drilling	Drilling Superintendent (MI)	1978
Freedom Drilling	Vice President (MI)	1979-1981
Pollister Drilling Corp.	President/Owner (MI,FL)	1982-present
Oil Tech Services	President/Owner (MI,FL)	2005-present

(Drilling, Plugging, Workover-Completion & Consulting on Oil and Gas Wells in Michigan, South Carolina and Florida)

**Recent Projects:**

Underbalance drilling of Glenwood & PDC (Arenac County)  
Drilling with Diamond Impreg. Bits & Turbines  
Horizontal Drilling (15,000 ft)  
CO2 Frac. Completion

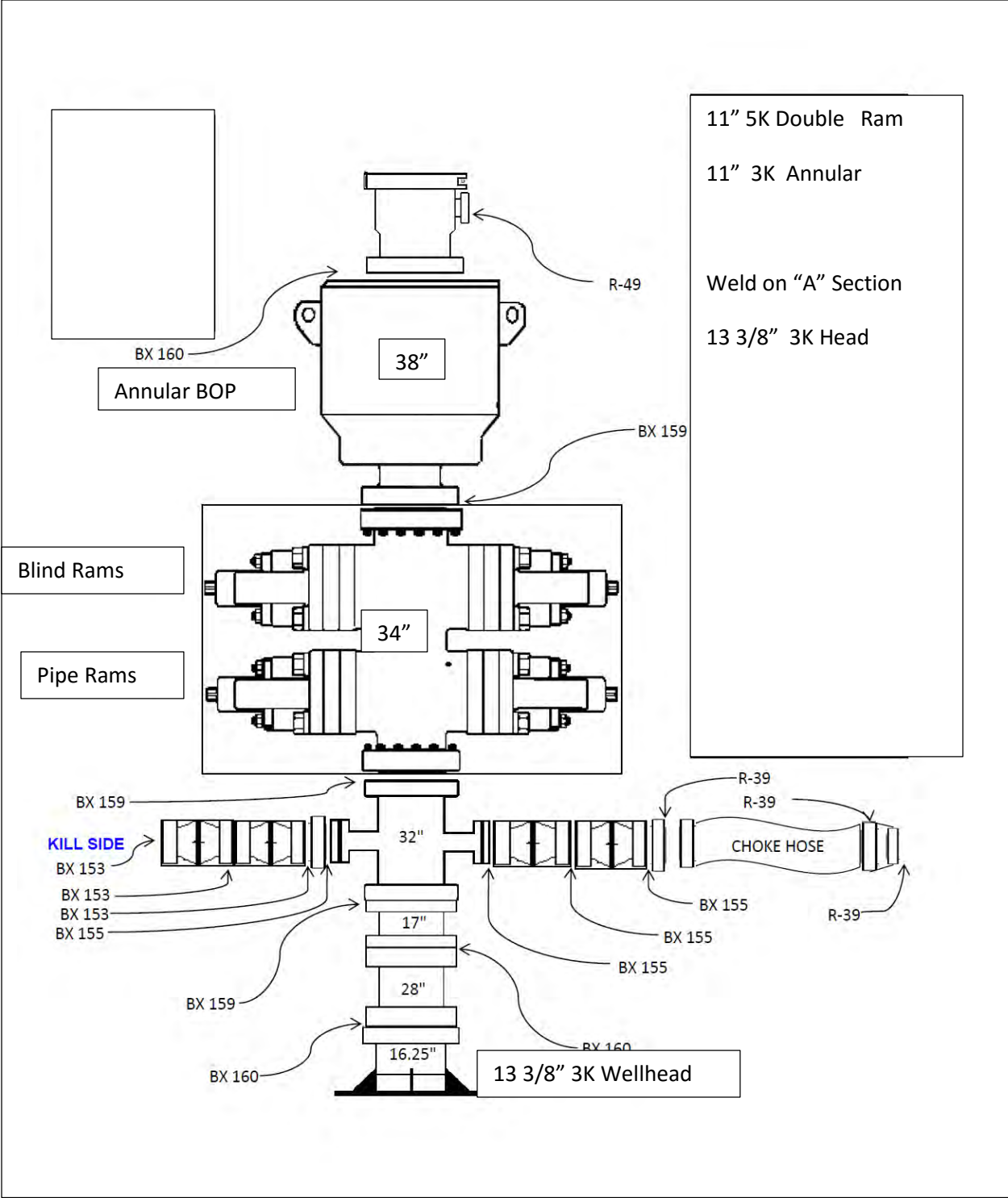
**Education/Training:**

University of Michigan, Ann Arbor: Education & Natural Resources (2yrs)  
Imco Mud School  
Smith International, Bit, Downhole Motor School  
Preston Moore Drilling Technology Two Week Seminar at O.U.  
Hughes Bit Company Seminar  
Shell Oil Company Well Control School One Week in Mississippi  
Ansul Firefighting School in Wisconsin  
Dale Carnegie Business School in Texas  
Shell Oil Company Drilling Engineering Two Week Seminar in Texas  
Current in H2S, First Aid, CPR, Well Control

***\*References will be furnished upon request.***

25.3 Kanter 23-2 BOP schematic

BOP Kanter 23-2 well



# **Century Oil Co., Inc.**



**Kanter Real Estate, LLC**

Kanter 23-2

Broward County, FL, US

## **DRILLING PROCEDURES**

Prepared By:

Ed Pollister

P.O. Box 765

Chokoloskee, FL 34138

239-695-2276

**Permit # 1366  
Kanter 23-2  
Kanter Real Estate LLC  
Drilling Procedure  
Broward County, Florida**

**DRILLING PROCEDURE**

- 1.** MIRU PDC Rig #3
- 2.** Install 20" Diverter and 6" diverter lines. Function Test.
- 3.** Spud with 17 ½" rock bit, 9" drill collars, 6" drill collars, and 5" HWDP. Drill down to 1800' while running both pumps @ 95 spm for a combined flow rate of 600 to 800 gpm. Weight on bit from 5k-25k at a rotary speed of 60-100 rpm.
- 4.** At 1800' sweep hole and circulate clean. POOH & run Resitivity Log to verify USDW depth. Trip back in to 1800'. Circulate & condition mud at POOH.
- 5.** RU casing crew, tools & stabbing board. PU and run Float shoe, one joint of 13 3/8", 54.5# J55 BT&C of casing, Float Collar, and 13 3/8", 54.5# J55 BT&C casing down to 1800'. Note: centralize w/bow springs 6' above FS, and one per joint latched over the next three casing collars.
- 6.** Circulate & condition mud for 1 ½ casing volumes. Mix & pump cement per recommendation. Pump LEAD cement followed by TAIL cement displace with fresh water. After landing Plug, pressure test to 1000 psi, then bleed off to check floats.
- 7.** After displacement, Top Off annulus with 50 sx. of TAIL cement. If cement falls or fails to circulate, notify FDEP in Fort Myers.
- 8.** Make rough cut/final cut on conductor & casing. Weld on 13 3/8" SOW x 13 3/8" 3M C-22 wellhead. Test well head to 1000#.
- 9.** NU BOP. Test annular preventer to 1000# (High)/200# (Low). Test all floor valves, IBOP, & mud lines back to mud pumps to 3000# (High)/250# (Low).
- 10.** RIH w/ 12 ¼" bit and slick BHA to top of cement.
- 11.** Pressure test casing to 1000#. Drill out float collar, cement, and float shoe.
- 12.** Drill new hole from 1800' – 2100' with both pumps for a combined flowrate of 500-800 gpm. Vary bit weight from 5k-35k at a rotary speed of 80 rpm. POOH for button bit to drill Boulder Zone cap & Boulder Zone.
- 13.** RIH w 12 ¼" button bit drill though Boulder Zone (2100'-3300') with lost returns. Take surveys every 500'.
- 14.** POOH & LD 9" D.C.
- 15.** RU casing crew with tools & stabbing board. RIH w/FS, 2 jts. 9 5/8" 47#, L-80 of casing, FC, & 9 5/8" 47#, L-80 casing down to 3800'.
- 16.** RU cement crew, cement plug container, & iron. Circulate & condition mud for one casing volume. Mix & pump cement per recommendation. Reciprocate to casing 15' and displace cement with mud. Bump plug 500# over differential pressure. Bleed back to check floats. RD cementers.

- 17.** ND flowlines & turn buckles. RU stack lift. Break bolts @ wellhead & spacer spool. Pick up BOP's & set casing slips. Make rough cut on casing & remove spacer spool & DSA. Make final cut on casing & NU 13 5/8", 3M x 11", 5M, C-22 casing spool. Finish NU "B" section. Set BOP's & RD stack lift. NU BOP's.
- 18.** Test "B" section flange & pack off to 2000#. Test all rams, choke manifold, & related valves to 3000# (High)/250# (Low). Test annular preventer to 1000# (High)/250# (Low). Test all floor valves, IBOP, & mud lines back to mud pumps to 3000# (High) /250# (Low).
- 19.** RIH w/8 1/2" PDC bit, 6" DC's, & 5" DP's down to top of cement. Test casing to 1500#. Drill out FC, cement, & FS. Drill 10' of new hole & circulate bottoms up until clean. Test casing shoe to 11.0# EMW.
- 20.** Drill down through Sunniland. Take surveys every 500'. Make frequent wiper trips every 30 hrs or however the hole dictates. Drill to 11,800' (TD) & POOH.
- 21.** RU Well Loggers & RIH and log well per Geologist recommendations.
- 22.** Upon evaluation, either run production casing and cement or P&A as per FDEP.
- 23.** RD & Move out.