DiSorbo
Environmental Consulting Firm

**TO:** Mike Gaudet - ITC

**FROM:** Chris C. Stanford, P.E.

**SUBJECT:** Proposed Discharge Limits - ITC Deer Park

**DATE:** April 14, 2019

**cc:** Aileen Hooks & Molly Cagle - Baker Botts, LLP

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As requested, I have reviewed the TCEQ's proposed list of effluent limitations and monitoring requirements for Outfall 002 at ITC's Deer Park Terminal.

Recommendations for which parameters on the TCEQ list should be monitored and which should be removed from the list are provided in Table 1. These recommendations are based on the following:

- Several compounds on the TCEQ list were duplicated. One of each of the duplicated compounds should be removed.
- Many of the compounds on the TCEQ list are already included in ITC's existing TPDES permit. The limits and monitoring requirements for those parameters are already sufficiently protective and reduced limits/additional monitoring are not necessary.
- I have reviewed the sampling data collected ITC from the ditch March 18-29th. The flow in the ditch at that time should be a worst-case representation of the water that is currently stored in the tanks.
    - All parameters that were monitored during that time which were never detected are proposed to be removed from the ditch.
    - Those parameters that were detected at least once in the ditch are retained on the list.
- For the remaining compounds which were not analyzed for as part of the ditch sampling, I am recommending the following:
    - Removal of those compounds which were not stored, used, or generated within the impacted tank farm. This includes pesticides, herbicides, chlorinated compounds, enterococci, as well as various other compounds.
    - Compounds which have the potential to be present are recommended for retention on the list. Specifically, this includes phenols, benzene containing compounds, cresols, and polycyclic aromatic hydrocarbons (PAHs).
- I also recommend the removal of TDS and chlorides from the list. The ditch which receives the effluent is tidally influenced. There is no reason to expect the discharge to contain levels of these compounds that would impact any of the receiving waters.

Table 2 provides my recommendations for the discharge limits for the compounds that remain on the monitoring list after implementing the above recommendations. The table also includes the limits for those compounds that were proposed by the TCEQ. I have the following concerns about the TCEQ proposed limits:

- Some of the proposed limits are based on the OCPSF effluent guidelines for discharges with biological treatment (40 CFR 414.91) and the TCEQ has proposed using the daily average concentrations from those guidelines as daily maximum limits. The standard approach is to apply the average concentrations as daily average limits and there is no need to deviate from that approach in this situation.
- In some cases, it appears that the TCEQ has proposed daily maximum limits based on the TRRP benchmarks. In many of those cases, they are using the chronic benchmark as a daily maximum limit. The benchmarks are intended to apply in the receiving in water itself, not to a discharge entering that stream. In addition, chronic benchmarks represent long term goals and as such are be better suited as the basis for an average limit rather than a daily maximum limit
- As indicated in the attached table, there are numerous compounds with maximum limits that are not listed either in the TRRP standards or the Texas Surface Water Quality Standards. My review did not identify any standards or criteria adopted by the TCEQ that apply to these compounds.

A more appropriate approach for setting limits and monitoring requirements would be guided by the TCEQ's Implementation Procedures, the TSWQS and current TCEQ policies for industrial TPDES permits, all of which are carefully designed to be fully protective of human health, aquatic life and the food chain:

- Limits should be applied as both a daily average and a daily maximum in accordance with established procedures.
- For compounds which Texas has adopted surface water criteria, the limits would be calculated in accordance with the Implementation Procedures.
- For the compounds listed in 40 CFR 414.91, the daily average and maximum concentrations would be utilized.
- When the compounds are on the 40 CFR 414.91 list and there is an adopted criterion in the TSWQS, the more stringent of the two sets of limits would be utilized.
- Compounds which have no adopted criteria and for which there are no established treatment standards would be report only, which is consistent with TPDES permitting practices. The data that is collected could then be utilized to evaluate the discharge against the TRRP benchmarks or other TCEQ standards.

In regards to the sampling frequency, my recommendation would be sample these constituents three times per week. That is consistent with requirements for major industrial facilities. Sampling daily will be logistically very difficult and the additional data collected would not be of significant value.



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# Table 1
## ITC Proposed Compund Monitoring List

**Color Key:**

**Compound in white to be monitored**

**Parameter to be removed. Already in TPDES permit**

**Duplicate on TCEQ List. Parameter to be removed.**

**Not detected in ditch. Parameter to be removed.**

**No basis for monitoring given compounds known to be present onsite and in fire fighting water. Parameter to be removed.**

**No environmental significance. Parameter to be removed.**

| Parameter | Basis for Removal/Retaining | ITC Ditch Sampling Data (1) | | |
|---|---|---|---|---|
| | | No. Hits | Average (ppm) | Max (ppm) |
| Carbonaceous Biochemical Oxygen Demand 5-day | Already limited in TPDES permit. No need for additional limits | | | |
| Chemical Oxygen Demand | Already limited in TPDES permit. No need for additional limits | | | |
| Total Organic Carbon | | | | |
| Oil and Grease | Already limited in TPDES permit. No need for additional limits | | | |
| Total Dissolved Solids | Discharge is to a tidally influenced ditch. There is no standard or concern with TDS in effluent. | | | |
| Chloride | Discharge is to a tidally influenced ditch. There is no standard or concern with chorides in effluent. | | | |
| Perfluoro-n-octane Sulfonate | | | | |
| Enterococci | Domestic sewage is not treated or discharged. ITC has requested removal of Outfall 102 - domestic plant was never installed. | | | |
| Cyanide | Already limited in TPDES permit. No need for additional limits | | | |
| Arsenic Total | Already limited in TPDES permit. No need for additional limits | | | |
| Cadmium | Already limited in TPDES permit. No need for additional limits | | | |
| Chromium, Hexavalent | Already limited in TPDES permit. No need for additional limits | | | |
| Chromium, Total | Already limited in TPDES permit. No need for additional limits | | | |
| Cobalt | Already limited in TPDES permit. No need for additional limits | | | |



ED_002627_00020826-00003

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**No environmental significance. Parameter to be removed.**

| Parameter | Basis for Removal/Retaining | ITC Ditch Sampling Data [1] | | |
|---|---|---|---|---|
| | | No. Hits | Average (ppm) | Max (ppm) |
| Copper, Total | Already limited in TPDES permit. No need for additional limits | | | |
| Lead, Total | Already limited in TPDES permit. No need for additional limits | | | |
| Mercury, Total | Already limited in TPDES permit. No need for additional limits | | | |
| Nickel, Total | Already limited in TPDES permit. No need for additional limits | | | |
| Thallium, Total | Already limited in TPDES permit. No need for additional limits | | | |
| Tin, Total | Already limited in TPDES permit. No need for additional limits | | | |
| Zinc, Total | Already limited in TPDES permit. No need for additional limits | | | |
| 1,1,1,2-Tetrachloroethane | Chlorinated compound. Not present in the impacted tank farm. | | | |
| 1,1,1 - Trichloroethane | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| 1,1,2,2-Tetrachloroethane | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| 1,1,,2-Trichloro-1,2,2-trifluoroethane | CFC. Not present on site | None | 0 | 0 |
| 1,1,2-Trichloroethane | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| 1,1-Biphenyl | Detected in ditch | 73 | 0.122 | 1.1 |
| 1,1-Dichloroethane | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| 1,1-Dichloroethylene (1,1-Dichloroethene) | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |

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**No environmental significance. Parameter to be removed.**

| Parameter | Basis for Removal/Retaining | ITC Ditch Sampling Data [1] | | |
|---|---|---|---|---|
| | | No. Hits | Average (ppm) | Max (ppm) |
| 1,1-Dichloropropene | Chlorinated compound. Not present in the impacted tank farm. | | | |
| 1,2,3-Trichlorobenzene | Benzene compound | | | |
| 1,2,3-Trichloropropane | Chlorinated compound. Not present in the impacted tank farm. | | | |
| 1,2,4,5-Tetrachlorobenzene | Chlorinated compound. Not present in the impacted tank farm. | | | |
| 1,2,4-Trichlorobenzene | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| 1,2,4-Trimethylbenzene | Benzene compound, occcurs natually in petroleum | | | |
| 1,2-Dibromo-3-chloropropane | Herbicide banned in US since 1979. Not present in the impacted tank farm. | None | 0 | 0 |
| 1,2-Dibromoethane DUPLICATE | Duplicated on TCEQ list | | | |
| 1,2-Dibromoethane (Ethylene Dibromide) | Organobromine compound. Not present in the impacted tank farm. | None | 0 | 0 |
| 1,2-Dichloroethane | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| 1,2-Dichloropropane | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| 1,2-Diphenylhydrazine | No longer produced in the US. Not present in the impacted tank farm. | | | |
| 1,2-trans-Dichloroethylene | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| 1,3,5-Trimethylbenzene | Benzene compound | | | |
| 1,3-Dichloropropene (1,3-Dichloropropylene) | Detected in ditch | 1 | 0.09 | 0.09 |

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| Parameter | Basis for Removal/Retaining | ITC Ditch Sampling Data [1] | | |
|---|---|---|---|---|
| | | No. Hits | Average (ppm) | Max (ppm) |
| 2,2-Dichloropropane | Chlorinated compound. Not present in the impacted tank farm. | | | |
| 2,2-Oxybis(1-chloropropane) | Duplicated on TCEQ list. This compound is the same as bis(2-chloroisopropyl)ether. | | | |
| 2,4,5 Trichlorophenol | | None | 0 | 0 |
| 2,4,5- TP (Silvex) | Herbicide. Not present in the impacted tank farm. | | | |
| 2,4,5 Trichlorophenol | Duplicated on TCEQ List | | | |
| 2,4,6 Trichlorophenol | Already limited in TPDES permit. No need for additional limits | None | | |
| 2,4-Dichlorophenol | Detected in ditch | 1 | 0.017 | 0.017 |
| 2,4-Dimethylphenol | Detected in ditch | 61 | 0.022 | 0.072 |
| 2,4-Dinitrophenol | | None | 0 | 0 |
| 2,4-Dinitrotoluene | Detected in ditch | 1 | 0.55 | 0.55 |
| 2,6-Dinitrotoluene | Detected in ditch | 1 | 0.76 | 0.76 |
| 2-Butanone | Already limited in TPDES permit. No need for additional limits | 16 | 0.566 | 0.82 |
| 2-Chloronaphthalene | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| 2-Chlorophenol | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| 2-Hexanone | Solvent. Not present in the impacted tank farm. | None | 0 | 0 |
| 2-Methylnaphthalene | PAH. | 96 | 1.12 | 17 |
| 2-Methylphenol DUPLICATE W/O-CRESOL | Duplicated on TCEQ list | | | |
| 2-Nitroanaline | | None | 0 | 0 |
| 2-Nitrophenol | | None | 0 | 0 |
| 3&4-Methylphenol | Detected in ditch | 52 | 0.045 | 0.23 |

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**No environmental significance. Parameter to be removed.**

| Parameter | Basis for Removal/Retaining | ITC Ditch Sampling Data [1] | | |
|---|---|---|---|---|
| | | No. Hits | Average (ppm) | Max (ppm) |
| 3,3-Dichlorobenzidine | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| 3,4-Benzofluoranthene | Detected in ditch | | | |
| 3-Nitroaniline | | None | 0 | 0 |
| 4,4-DDD | Insecticide. Not present in the impacted tank farm. | | | |
| 4,4-DDE | Pesticide. Not present in the impacted tank farm. | | | |
| 4,4-DDT | Pesticide. Not present in the impacted tank farm. | | | |
| 4,4-Isopropylidenediphenol (Bisphenol A) - NO STANDARD | Used in plastics. Not present in the impacted tank farm. | | | |
| 4,6-Dinitro-2-methylphenol | | None | 0 | 0 |
| 4,6-Dinitro-0-cresol | Cresol | | | |
| 4-Chloro-3-methylphenol | Detected in ditch | 1 | 0.0031 | 0.0031 |
| 4-Chloroaniline | Detected in ditch | 1 | 0.076 | 0.076 |
| 4-Methyl-2-pentanone | Detected in ditch | 1 | 0.54 | 0.54 |
| 4-Nitroaniline | | None | 0 | 0 |
| 4-Nitrophenol | | None | 0 | 0 |
| Acenapthene | Detected in ditch | 47 | 0.041 | 0.42 |
| Acenaphthylene | Detected in ditch | 75 | 0.087 | 0.88 |
| Acetone | Already limited in TPDES permit. No need for additional limits | 32 | 1.99 | 13 |
| Acetophenone | Already limited in TPDES permit. No need for additional limits | 11 | 0.035 | 0.077 |
| Acrylonitrile | Not present in the impacted tank farm. | | | |
| Aldrin | Pesticide banned in 1974. Not present in the impacted tank farm. | | | |



ED_002627_00020826-00007

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**Not detected in ditch. Parameter to be removed.**

**No basis for monitoring given compounds known to be present onsite and in fire fighting water. Parameter to be removed.**

**No environmental significance. Parameter to be removed.**

| Parameter | Basis for Removal/Retaining | ITC Ditch Sampling Data (1) | | |
|---|---|---|---|---|
| | | No. Hits | Average (ppm) | Max (ppm) |
| Ammonia Nitrogen | Already limited in TPDES permit. No need for additional limits | | | |
| Aniline | Not present in the impacted tank farm. | | | |
| Anthracene | PAH. | 39 | 0.014 | 0.094 |
| Antimony | No reason to expect it to be present in the impacted tank farm. | | | |
| Atrazine | Herbicide. Not present in the impacted tank farm. | None | 0 | 0 |
| Benzaldehyde | | None | 0 | 0 |
| Benzene | Detected in ditch | 101 | 45.3 | 250 |
| Benzidine | Not present in the impacted tank farm. | | | |
| Benzo(a)anthracene | PAH. Detected in ditch | 30 | 0.0054 | 0.043 |
| Benzo(a)pyrene | PAH. Detected in ditch | 20 | 0.0024 | 0.0045 |
| Benzo(b)fluoranthene | PAH. Detected in ditch | 19 | 0.0021 | 0.003 |
| Benzo(k)fluoranthene | PAH. Detected in ditch | 17 | 0.0012 | 0.0018 |
| Benzoic Acid | Not present in the impacted tank farm. | | | |
| Benzyl alcohol | Solvent. Not present in the impacted tank farm. | | | |
| Bis(2-chloroethoxy)methane | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Bis(2-chloroethyl)ether | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Bis(2-chloroisopropyl)ether | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Bis(2-ethylhexyl)phthlate (Di(2-ethylhexyl)phthalate) | Already limited in TPDES permit. No need for additional limits | None | 0 | 0 |



ED_002627_00020826-00008

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**Not detected in ditch. Parameter to be removed.**

**No basis for monitoring given compounds known to be present onsite and in fire fighting water. Parameter to be removed.**

**No environmental significance. Parameter to be removed.**

| Parameter | Basis for Removal/Retaining | ITC Ditch Sampling Data [1] | | |
|---|---|---|---|---|
| | | No. Hits | Average (ppm) | Max (ppm) |
| Bis(chloromethyl)ether | Chlorinated compound. Not present in the impacted tank farm. | | | |
| Bromobenzene | Organobromine compound. Not present in the impacted tank farm. | | | |
| Bromochloromethane | Organobromine compound. Not present in the impacted tank farm. | | | |
| Bromodichloromethane (Dichlorobromomethane) | Organobromine compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Bromoform (Tribromomethane) | Organobromine compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Butyl benzyl phthalate | Already limited in TPDES permit. No need for additional limits | None | 0 | 0 |
| Caprolactam | Detected in ditch | 1 | 7.5 | 7.5 |
| Carbaryl | Insecticide. Not present in the impacted tank farm. | | | |
| Carbazole | Already limited in TPDES permit. No need for additional limits | None | 0 | 0 |
| Carbon disulfide | Used in the manufacture of chlorinated compounds and polymers. Not present in the impacted tank farm. | None | 0 | 0 |
| Carbon Tetrachloride | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Chlordane | Pesticide. Not present in the impacted tank farm. | | | |
| Chlorobenzene | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Chlorodibromomethane (Dibromochloromethane) | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |



ED_002627_00020826-00009

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**Not detected in ditch. Parameter to be removed.**

**No basis for monitoring given compounds known to be present onsite and in fire fighting water. Parameter to be removed.**

**No environmental significance. Parameter to be removed.**

| Parameter | Basis for Removal/Retaining | ITC Ditch Sampling Data [1] | | |
|---|---|---|---|---|
| | | No. Hits | Average (ppm) | Max (ppm) |
| Chloroethane | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Chloroform (Trichloromethane) | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Chloromethane | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Chlorpyrifos | Pesticide. Not present in the impacted tank farm. | | | |
| Chrysene | PAH. Detected in ditch | 19 | 0.0027 | 0.0042 |
| cis-1,2-Dichloroethylene(cis and trans) | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| cis-1,2-Dichloroethylene | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| cis-1,3-Dichloropropene | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Cresols (Methylphenols) | Cresol | | | |
| Cyclohexane | Detected in ditch | 68 | 0.92 | 7.3 |
| Danitol (Fenpropathrin) | Pesticide. Not present in the impacted tank farm. | | | |
| Demeton | Pesticide. Not present in the impacted tank farm. | | | |
| Diazinon | Pesticide. Not present in the impacted tank farm. | | | |
| Dibenzo(a,h)anthracene | PAH. | None | 0 | 0 |
| Dibenzofuran | | None | 0 | 0 |
| Dichlorodifluoromethane | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Dichloromethane (Methylene Chloride) | Detected in ditch | 2 | 0.51 | 0.51 |



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**Not detected in ditch. Parameter to be removed.**

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**No environmental significance. Parameter to be removed.**

| Parameter | Basis for Removal/Retaining | ITC Ditch Sampling Data (1) | | |
|---|---|---|---|---|
| | | No. Hits | Average (ppm) | Max (ppm) |
| Dicofol (Kelthane) | Pesticide. Not present in the impacted tank farm. | | | |
| Dieldrin | Pesticide. Not present in the impacted tank farm. | | | |
| Diethyl phthalate | Plasticizer. Not present in the impacted tank farm. | None | 0 | 0 |
| Dimethyl phthalate | Insect repellant ingredient. Not present in the impacted tank farm. | None | 0 | 0 |
| Di-n-butylphthalate | Plasticizer. Not present in the impacted tank farm. | None | 0 | 0 |
| Dioxins/Furans(TCDD Equivalents) | By products of herbicide manufacturing and pulp & paper mills. Not present in the impacted tanks farm. | | | |
| Endosulfan I (alpha) | Pesticide. Not present in the impacted tank farm. | | | |
| Ensosulfan II (beta) | Pesticide. Not present in the impacted tank farm. | | | |
| Endosulfan sulfate | Pesticide. Not present in the impacted tank farm. | | | |
| Endrin | Pesticide. Not present in the impacted tank farm. | | | |
| Epichlorohydrin | Chlorinated compound. Not present in the impacted tank farm. | | | |
| Ethylbenzene | Detected in ditch | 101 | 2.2 | 10 |
| Ethylene Glycol | Used in plastics and antifreeze. Not present in the impacted tank farm. | | | |
| Fluoranthene | Already limited in TPDES permit. No need for additional limits | 41 | 0.0096 | 0.086 |
| Fluorene | Detected in ditch | 59 | 0.083 | 0.75 |



ED_002627_00020826-00011

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**No environmental significance. Parameter to be removed.**

| Parameter | Basis for Removal/Retaining | ITC Ditch Sampling Data (1) | | |
|---|---|---|---|---|
| | | No. Hits | Average (ppm) | Max (ppm) |
| Guthion (Azinphos Methyl) | Pesticide. Not present in the impacted tank farm. | | | |
| Heptachlor | Pesticide. Not present in the impacted tank farm. | | | |
| Heptachlor Epoxide | Pesticide. Not present in the impacted tank farm. | | | |
| Hexachlorobenzene | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Hexachlorobenzene- DUPLICATE | Duplicated on TCEQ list | | | |
| Hexachlorobutadiene | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Hexachlorocyclohexane (alpha) | Pesticide. Not present in the impacted tank farm. | | | |
| Hexachlorococyclohexane (beta) | Pesticide. Not present in the impacted tank farm. | | | |
| Hexachlorococyclohexane (gamma) (Lindane) | Pesticide. Not present in the impacted tank farm. | | | |
| Hexachlorocyclopentadiene | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Hexachloroethane | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Hexachlorophene | Chlorinated compound. Not present in the impacted tank farm. | | | |
| Indeno(1,2,3-cd)pyrene | Detected in ditch | 19 | 0.0014 | 0.0019 |
| Isophorone | Detected in ditch | 47 | 0.027 | 0.1 |
| Isopropylbenzene | Detected in ditch | 53 | 0.18 | 1.4 |
| m,p-Xylene | Detected in ditch | 101 | 11 | 61 |
| Malathion | Insecticide. Not present in the impacted tank farm. | | | |

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| Parameter | Basis for Removal/Retaining | ITC Ditch Sampling Data (1) | | |
|---|---|---|---|---|
| | | No. Hits | Average (ppm) | Max (ppm) |
| m-Dichlorobenzene (1,3-Dichlorobenzene) | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Methoxychlor | Pesticide. Not present in the impacted tank farm. | | | |
| Methyl acetate | | None | 0 | 0 |
| Methyl bromide (Bromomethane) | Organobromine compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Methyl Chloride | Duplicate on TCEQ List (Chloromethane) | | | |
| Methyl Ethyl Ketone (2-Butanone) | Duplicated on TCEQ list | | | |
| Metyl Tertiary Butyl Ether | Detected in ditch | 17 | 0.076 | 0.14 |
| Methlycyclohexane | Detected in ditch | 85 | 1.01 | 13 |
| Methylene bromide | Organobromine compound. Not present in the impacted tank farm. | | | |
| Methylnaphthalene | PAH. | | | |
| Mirex | Pesticide. Not present in the impacted tank farm. | | | |
| Naphthalene | Detected in ditch | 101 | 2 | 29 |
| n-Butylbenzene | Benzene compound | | | |
| n-Decane | Already limited in TPDES permit. No need for additional limits | | | |
| Nitrobenzene | used in lube oils | None | 0 | 0 |
| N-Nitrosodiethylamine | Gasoline additive | | | |
| n-Nitrosodimethylamine | Not present in the impacted tank farm. | | | |
| N-Nitroso-di-n-Butylamine | Not present in the impacted tank farm. | | | |
| N-Nitroso-di-n-propylamine | | None | 0 | 0 |

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**Duplicate on TCEQ List. Parameter to be removed.**

**Not detected in ditch. Parameter to be removed.**

**No basis for monitoring given compounds known to be present onsite and in fire fighting water. Parameter to be removed.**

**No environmental significance. Parameter to be removed.**

| Parameter | Basis for Removal/Retaining | ITC Ditch Sampling Data [1] | | |
|---|---|---|---|---|
| | | No. Hits | Average (ppm) | Max (ppm) |
| N-Nitrosodiphenylamine | Formerly used in rubber manufacturing. Not present in the impacted tank farm. | None | 0 | 0 |
| n-Octadecane | Already limited in TPDES permit. No need for additional limits | | | |
| Nonylphenol | Surfactant. Not present in the impacted tank farm. | | | |
| n-Propylbenzene | Organic solvent. Not present in the impacted tank farm. | | | |
| o-Chlorotoluene | Chlorinated compound. Not present in the impacted tank farm. | | | |
| o-Cresol | Already limited in TPDES permit. No need for additional limits | 53 | 0.054 | 0.34 |
| o-Dichlorobenzene (1-2 Dichlorobenzene) | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| O&G-DUPLICATE | Duplicated on TCEQ list | | | |
| o-Xylene | Detected in ditch | 101 | 4.5 | 24 |
| p-Chlorotoluene | Chlorinated compound. Not present in the impacted tank farm. | | | |
| p-Cresol (4-Methylphenol) | Already limited in TPDES permit. No need for additional limits | | | |
| p-Dichlorobenzene (1,4-dichlorobenzene) | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Pentachlorobenzene | Chlorinated compound. Not present in the impacted tank farm. | | | |
| Pentachlorophenol | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Phenanthrene | PAH. Detected in ditch | 73 | 0.08 | 0.91 |
| Phenol | Already limited in TPDES permit. No need for additional limits | 48 | 0.052 | 0.32 |

# Table 1
## ITC Proposed Compund Monitoring List

**Color Key:**

**Compound in white to be monitored**

**Parameter to be removed. Already in TPDES permit**

**Duplicate on TCEQ List. Parameter to be removed.**

**Not detected in ditch. Parameter to be removed.**

**No basis for monitoring given compounds known to be present onsite and in fire fighting water. Parameter to be removed.**

**No environmental significance. Parameter to be removed.**

| Parameter | Basis for Removal/Retaining | ITC Ditch Sampling Data [1] | | |
|---|---|---|---|---|
| | | No. Hits | Average (ppm) | Max (ppm) |
| Phosphate (as PO4) | Already limited in TPDES permit. No need for additional limits | | | |
| p-Isopropyltoluene | Used in manufacture of paint and furniture. Not present in the impacted tank farm. | | | |
| Polychlorinated Biphenyls | Not present in the impacted tank farm. | | | |
| Pyrene | PAH. Detected in ditch | 51 | 0.017 | 0.083 |
| Pyridine | Already limited in TPDES permit. No need for additional limits | | | |
| sec-Butylbenzene | Not present in the impacted tank farm. | | | |
| Selenium | Not present in the impacted tank farm. | | | |
| Silver | Not present in the impacted tank farm. | | | |
| Styrene | Detected in ditch | 67 | 1.77 | 12 |
| Sulfide | Already limited in TPDES permit. No need for additional limits | | | |
| tert-Butylbenzene | Benzene compound | | | |
| Tetrachloroethylene | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Toluene | Detected in ditch | 101 | 9.2 | 49 |
| BTEX, Total | Already limited in TPDES permit. No need for additional limits | | | |
| Total Organic Nitrogen | Already limited in TPDES permit. No need for additional limits | | | |
| Total Purgeable Halocarbons | Already limited in TPDES permit. No need for additional limits | | | |



ED_002627_00020826-00015

# Table 1
## ITC Proposed Compund Monitoring List

**Color Key:**

**Compound in white to be monitored**

**Parameter to be removed. Already in TPDES permit**

**Duplicate on TCEQ List. Parameter to be removed.**

**Not detected in ditch. Parameter to be removed.**

**No basis for monitoring given compounds known to be present onsite and in fire fighting water. Parameter to be removed.**

**No environmental significance. Parameter to be removed.**

| Parameter | Basis for Removal/Retaining | ITC Ditch Sampling Data (1) | | |
|---|---|---|---|---|
| | | No. Hits | Average (ppm) | Max (ppm) |
| Total Suspended Solids | Already limited in TPDES permit. No need for additional limits | | | |
| Toxaphene | Insecticide banned in US in 1990. Not present in the impacted tank farm. | | | |
| trans-1,2-Dichloroethene | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| trans-1,3-Dichlorophopene | Chlorinated compound. Not present in the impacted tank farm. | | | |
| Tributyltin | Biocide used for paint. Not present in the impacted tank farm. | | | |
| Trichloroethylene (Trichloroethene) | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Trichlorofluoromethane | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Vinyl Chloride | Chlorinated compound. Not present in the impacted tank farm. | None | 0 | 0 |
| Xylenes, Total | Detected in ditch | 101 | 15.5 | 85 |
| Notes; | | | | |

(1) Data collected in ditch downstream of impacted tank farm by ITC March 18-27, 2019



ED_002627_00020826-00016

## Table 2
## ITC Proposed Discharge Limits

| Parameter | TCEQ Proposed Daily Max (ppm) | Basis for TCEQ Limit | ITC Proposed Limits | | Basis for Proposed Limits |
|---|---|---|---|---|---|
| | | | Daily Avg (ppm) | Daily Max (ppm) | |
| Total Organic Carbon | Report | | Report | Report | No applicable standard |
| Perfluoro-n-octane Sulfonate | Report | | Report | Report | No applicable standard |
| 1,1-Biphenyl | 3.52 | Unknown. Not listed in TRRP tables | Report | Report | No applicable standard |
| 1,2,3-Trichlorobenzene | 0.171 | Unknown. TRRP benchmark is for freshwater, not salt water | Report | Report | No applicable standard |
| 1,2,4-Trimethylbenzene | 0.217 | Set to chronic saltwater benchmark for aquatic life | Report | Report | No applicable standard |
| 1,3,5-Trimethylbenzene | 3.05 | Unknown. TRRP benchmark is for freshwater, not salt water | Report | Report | No applicable standard |
| 1,3-Dichloropropene (1,3-Dichloropropylene) | 0.029 | 40 CFR 414 daily average | 0.029 | 0.044 | Use limits based on 40 CFR 414.91 |
| 2,4-Dichlorophenol | 0.039 | 40 CFR 414 daily average | 0.039 | 0.112 | Use limits based on 40 CFR 414.91 |
| 2,4-Dimethylphenol | 0.018 | 40 CFR 414 daily average | 0.018 | 0.036 | Use limits based on 40 CFR 414.91 |
| 2,4-Dinitrotoluene | 0.017 | 40 CFR 414 daily average | 0.113 | 0.285 | Use limits based on 40 CFR 414.91 |
| 2,6-Dinitrotoluene | 0.03 | 40 CFR 414 daily average | 0.255 | 0.641 | Use limits based on 40 CFR 414.91 |
| 2-Methylnaphthalene | 0.03 | Set to chronic saltwater benchmark for aquatic life | Report | Report | No applicable standard |
| 3&4-Methylphenol | 9.31 | Unknown | Report | Report | No applicable standard |
| 3,4-Benzofluoranthene | 0.023 | 40 CFR 414 daily average | 0.023 | 0.061 | Use limits based on 40 CFR 414.91 |
| 4,6-Dinitro-O-cresol | 0.078 | 40 CFR 414 daily average | 0.078 | 0.277 | Use limits based on 40 CFR 414.91 |
| 4-Chloro-3-methylphenol | 0.87 | Unknown | Report | Report | No applicable standard |
| 4-Chloroaniline | 2.14 | Unknown | Report | Report | No applicable standard |
| 4-Methyl-2-pentanone | 61.5 | Unknown | Report | Report | No applicable standard |
| Acenaphthene | 0.022 | Unknown | Report | Report | No applicable standard |
| Acenaphthylene | 0.022 | 40 CFR 414 daily average | 0.022 | 0.059 | Use limits based on 40 CFR 414.91 |
| Anthracene | 0.00018 | Set to TRRP benchmark for chronic saltwater | 0.022 | 0.059 | Use limits based on 40 CFR 414.91 |
| Benzene | 0.037 | 40 CFR 414 daily average | 0.037 | 0.136 | Use limits based on 40 CFR 414.91 |
| Benzo(a)anthracene | 0.000025 | Set to TRRP benchmark for fish only. | 0.022 | 0.059 | Use limits based on 40 CFR 414.91 |
| Benzo(a)pyrene | 0.0000025 | Set to TRRP benchmark for fish only. | 0.023 | 0.061 | Use limits based on 40 CFR 414.91 |
| Benzo(b)fluoranthene | 0.000013 | Set to TRRP benchmark for fish only. | Report | Report | No applicable standard |
| Benzo(k)fluoranthene | 0.00013 | Set to TRRP benchmark for fish only. | 0.022 | 0.059 | Use limits based on 40 CFR 414.91 |
| Caprolactam | 408 | Unknown | Report | Report | No applicable standard |
| Chrysene | 0.00252 | Set to TRRP benchmark for fish only. | 0.022 | 0.059 | Use limits based on 40 CFR 414.91 |
| Cresols (Methylphenols) | 12.715 | Set to daily average based on Textox calcs | 12.715 | 26.901 | Use Textox calculated limits |
| Cyclohexane | 295 | Unknown | Report | Report | No applicable standard |
| Dichloromethane (Methylene Chloride) | 0.04 | 40 CFR 414 daily average | 0.04 | 0.089 | Use limits based on 40 CFR 414.91 |



ED_002627_00020826-00017

## Table 2
## ITC Proposed Discharge Limits

| Parameter | TCEQ Proposed Daily Max (ppm) | Basis for TCEQ Limit | ITC Proposed Limits | | Basis for Proposed Limits |
|---|---|---|---|---|---|
| | | | Daily Avg (ppm) | Daily Max (ppm) | |
| Ethylbenzene | 0.032 | 40 CFR 414 daily average | 0.032 | 0.108 | Use limits based on 40 CFR 414.91 |
| Fluorene | 0.022 | 40 CFR 414 daily average | 0.022 | 0.059 | Use limits based on 40 CFR 414.91 |
| Indeno(1,2,3-cd)pyrene | 0.000013 | Set to TRRP benchmark for fish only. | Report | Report | No applicable standard |
| Isophorone | 0.65 | Set to TRRP chronic benchmark. | Report | Report | No applicable standard |
| Isopropylbenzene (Cumene) | 8.44 | Unknown. TRRP benchmark is for freshwater, not salt water | Report | Report | No applicable standard |
| m,p-Xylene | 24 | Unknown. | Report | Report | No applicable standard |
| Metyl Tertiary Butyl Ether | 0.015 | Set to TRRP benchmark for fish and water. | Report | Report | No applicable standard |
| Methlycyclohexane | 157 | Unknown | Report | Report | No applicable standard |
| Methylnaphthalene | 0.00029 | Unknown | Report | Report | No applicable standard |
| Naphthalene | 0.022 | 40 CFR 414 daily average | 0.022 | 0.059 | Use limits based on 40 CFR 414.91 |
| n-Butylbenzene | 1.2 | Unknown. TRRP benchmark is for freshwater, not salt water | Report | Report | No applicable standard |
| N-Nitrosodiethylamine | 0.00287 | Unknown | 0.00287 | 0.00607 | Use Textox calculated limits |
| o-Xylene | 24 | Unknown | Report | Report | No applicable standard |
| Phenanthrene | 0.00362 | Unknown. | 0.00362 | 0.00766 | Use Textox calculated limits |
| Pyrene | 0.00024 | Set to chronic saltwater benchmark for aquatic life | 0.025 | 0.067 | Use limits based on 40 CFR 414.91 |
| Styrene | 0.455 | Set to chronic saltwater benchmark for aquatic life | Report | Report | No applicable standard |
| tert-Butylbenzene | 1.4 | Unknown. TRRP benchmark is for freshwater, not salt water | Report | Report | No applicable standard |
| Toluene | 0.026 | 40 CFR 414 daily average | 0.026 | 0.08 | Use limits based on 40 CFR 414.91 |
| Xylenes, Total | 0.85 | Set to chronic saltwater benchmark for aquatic life | Report | Report | No applicable standard |



ED_002627_00020826-00018