**Identifying Oxidation Reduction (“Re-Dox”) Reactions.**

**Remember Oil Rig??**

**Oil: “Oxidation is losing electrons”**

**Rig: “Reduction is gaining electrons”**

 **If you are given a reaction, once you assign oxidation charges to the product(s), you can identify the reaction as a Re-Dox reaction, what is oxidized, what is reduced, the oxidizing agent and the reducing agent.**

**\*\*Remember oxidation numbers are “apparent charges” until the atoms are bonded to another element therefore, isolated elements or atoms have a net charge of 0.**

**Example: Iron Rusting.**

**Fe under goes oxidation O2 undergoes**

**From 0 to +3. reduction from 0 to -2.**

**4Fe(s) + 3 O2(g)🡪 2Fe2O3 (s)**

 **+3 -2**

 **0**

 **0**

 **Fe: Oxidized (lost electrons).**

 **O: Reduced (gained electrons).**

 **Fe: Reduction agent (Caused reduction).**

 **O: Oxidizing agent (Caused Oxidation).**

**Oxidation reaction:**

**4Fe0 (s) 🡪 2Fe2+3**

**Reduction reaction:**

**3O20 (g)🡪 3O2-2 (s)**

**Total number of electrons given up by atoms being oxidized:**

 **4Fe’s x 3 electrons = 12 electrons from Fe.**

**Total number of electrons being gained by atoms being reduced:**

 **6 O’s x 2 electrons = 12 electrons to O.**

**Electrons lost = Electrons gained.**