A. GENERAL INFORMATION:
1. Spill Incident Number: 629874
2. Name of Location: 16°39' EGBEMA ASSA T/L @ ASSA
3. Name of nearest community: IMO
4. State: IMO LGA OHAJIEGBEMA
5. Type of Production facility/Installation: TRUNK LINE
6. Date owner/District: 2119/PINE/SP

B. INCIDENT INFORMATION:
1. Date of incident: 2ND MARCH, 2011
2. Date/Period of investigation: 4TH MARCH, 2011
3. Description of spill point environment:
   - Firmed soil: [X] [N]
   - Loose soil: [Y] [N]
   - Previously excavated area: [Y] [N]
   - Under water: [Y] [N]
   - Swampy: [Y] [N]
   - Exposed pipe surface: [Y] [N]
4. Description of leak point (tick as applicable):
   - Drilled hole: [Y] [N]
   - Hack saw cut, [Y] [N]
   - Explosive tear, [Y] [N]
   - Complete Rupture: [Y] [N]
   - Inward dent: [Y] [N]
   - Well head tampering: [Y] [N]
   - Failed Weld-on illegal hot tap valve, [Y] [N]
   - Missing pipeline (flowline) [Y] [N]
   - Crude oil theft (illegal bunkering) point, [Y] [N]
   - Third party tampering with Clamp Bolt/Nut, [Y] [N]
   - Third party tampering with valve setting, [Y] [N]
   - Third party tampering with flange Nuts/bolts, [Y] [N]
   - Corrosion, [Y] [N]
   - Saver-pit over flow, [Y] [N]
   - Surge vessel overflow, [Y] [N]
   - Outward dent [Y] [N]
   - Others (specify) [Y] [N]

5. After Joint Investigation of the INCIDENT SPILL WAS FOUND TO BE DUE TO THIRD PARTY INTERFERENCE

6. Spill point coordinates (MINNA MID-BELT):
   - Northing: 152829.823m
   - Easting: 481787.579m
C. RISK/DAMAGE ASSESSMENT

7. Type of environment of spill site:
   - ✔ Land
   - ☐ Swamp
   - ☐ Water

   Type of environment of which oil has spread:
   - ✔ Land
   - ☐ Swamp
   - ☐ Water

8. Distance from the nearest sensitive habitat
   - ☐ Government reserved and designated protected area [m]
   - ☐ Drinking water source [m]
   - ☐ Built up area [m]
   - ☐ Farmlands [m]
   - ☐ Fish Farm/Pond [m]
   - ☐ Fishing net [m]
   - ☐ Others (specify).

9. Containment measures put in place:
   - ☐ Booms [Y] [N]
   - ☐ Trench [Y] [N]
   - ☐ Dyke [Y] [N]

   - ☐ Others: **NOT APPLICABLE**

10. Any pictures or video coverage? [Y] [N]

11. Was there any disruption to the investigation? [Y] [N]

If yes give brief description:

**NOT APPLICABLE**

D. TYPE/NUMBERS OF PROPERTIES, IF ANY, FOUND WITHIN THE AREA OF SPREAD OF OIL

A. Structures / Properties

<table>
<thead>
<tr>
<th>S/N</th>
<th>Type of Structures</th>
<th>Description</th>
<th>Size</th>
<th>Number</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td><strong>NONE WITHIN AREA OF IMPACT</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Page 2 of 7
B. Crops/Economic Trees

<table>
<thead>
<tr>
<th>S/N</th>
<th>Types of crops</th>
<th>Young</th>
<th>Medium</th>
<th>Matured</th>
<th>Quantity</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NONE FOUND WITHIN AREA OF IMPACT</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

C. Fish/Nets/Ponds

<table>
<thead>
<tr>
<th>S/N</th>
<th>Fish/Nets/Ponds</th>
<th>Description</th>
<th>Quantity/Size</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NOT APPLICABLE</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

D. Others (Specify) i.e. Animal Traps

<table>
<thead>
<tr>
<th>S/N</th>
<th>Others</th>
<th>Description</th>
<th>Quantity/Size</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>NOT APPLICABLE</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

E. GRAPHIC DESCRIPTION OF LEAK POINT (Details should be contained in leak repair report)

SECTION OF 16” EGBEMA ASSA T/L @ ASSA

SHOWING ILLEGAL BUNKERING POINT FITTING

2” NIPPLE NOT DRILLED THROUGH WITH A VALUE 32” NIPPLES INSTALLED AT 12 O’CLOCK POSITION

\[\text{Diagram}\]
### Table Showing Some of Coordinates Taken During JIV For Area Calculation

<table>
<thead>
<tr>
<th>S/N</th>
<th>Northing</th>
<th>Easting</th>
</tr>
</thead>
<tbody>
<tr>
<td>959</td>
<td>481784.504</td>
<td>152829.916</td>
</tr>
<tr>
<td>960</td>
<td>481790.749</td>
<td>152829.823</td>
</tr>
<tr>
<td>961</td>
<td>481787.626</td>
<td>152823.671</td>
</tr>
<tr>
<td>962</td>
<td>481784.550</td>
<td>152826.747</td>
</tr>
</tbody>
</table>
G. INCIDENT INFORMATION:

17 Impacted Area Details
   a. Total calculated area of impact: 24 m²
      • Impact within SPDC R.O.W: 24 m²
      • Impact outside R.O.W: NIL

18 Volume of oil recovered before completion of JIV (V_rec):
   Recovered oil V_rec: NIL barrels

19. Computation of the residual volume on site
   a. Computation of the volume of pooled free phase oil (on land or confined water body).
      i. Area (m²) occupied by pool of free phase oil: ___ NOT APPLICABLE ___
      ii. Average Depth (m) of pool of free phase oil: ___
      iii. Volume of pooled free phase oil, V_pool: NIL barrels
      iv. ___

b. Computation of volume of infiltrated oil in the soil (V-3).
   i. Area (m²) covered by the oil: 24
      ii. Average Depth (m) below ground surface of infiltration of oil: 0.05
      iii. Soil type: CLAY
      iv. ϕ (effective porosity of the soil): 85%
      v. 0.60 barrels

20. Computation of volume of oil on open water based on standard coloration.

<table>
<thead>
<tr>
<th>Thickness (mm)</th>
<th>Percentage coverage</th>
<th>Volume (m³)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barely Visible</td>
<td>0.00004</td>
<td></td>
</tr>
<tr>
<td>Silvery</td>
<td>0.00008</td>
<td></td>
</tr>
<tr>
<td>Slight Colour</td>
<td>0.00015</td>
<td></td>
</tr>
<tr>
<td>Bright Colour</td>
<td>0.0003</td>
<td></td>
</tr>
<tr>
<td>Dull</td>
<td>0.001</td>
<td>NOT</td>
</tr>
<tr>
<td>Dark</td>
<td>0.002</td>
<td></td>
</tr>
<tr>
<td>Black oil</td>
<td>0.1</td>
<td></td>
</tr>
<tr>
<td>Emulsion (30% Oil)</td>
<td>1</td>
<td>NIL bbl</td>
</tr>
</tbody>
</table>

Percent Total 100% Total Volume NIL bbl

21. Calculation of evaporated volume:
   i. Oil type: **BONNY LIGHT**
   ii. E-Factor: **25%**
   iii. Volume of evaporated oil: **0.15 barrels**

<table>
<thead>
<tr>
<th>Oil Type</th>
<th>Bonny Light</th>
<th>Bonny Medium</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>E-Factor</td>
<td>E-Factor</td>
</tr>
<tr>
<td></td>
<td>&lt;1 day</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>1-7 days</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td>&gt;7 days</td>
<td>40%</td>
</tr>
</tbody>
</table>

9. Gross Total Estimated Spilled Volume: 
   \[ V_{est}(bbls) = V_{vap}(bbls) + V_{wat}(bbls) + V_{inf}(bbls) + V_{pool}(bbls) + V_{est}(bbls) \]

   \[ V_{est}(bbls) = 0.15 + 0.70 + 0.60 + 0.15 = 1.60 \]

10. Net Total Estimated Spilled Volume: 
    \[ V_{est}(bbls) = V_{vap}(bbls) + 0.6*V_{wat}(bbls) + V_{inf}(bbls) + V_{pool}(bbls) + V_{est}(bbls) \]

    \[ V_{est}(bbls) = 0.15 + 0.70 + 0.60 + 0.15 = 1.60 \]

*Calculation of the respective estimated volume is to done using the new spill estimation software on site
*Conversion of m3 to barrel is Total volume VT (m3) x 6.29
*Emulsification factor for spill on water to consider is 60% of volume of oil.

This report was filled and signed on the **04/03/2011** at incident site by joint investigation representative from

- Host Community
- Department of Petroleum Resources [DPR]
- National Oil Spill Detection and Response Agency [NOSDRA]
- State Ministry of Environment [SME]
- Nigeria Police Force [NPF]
- Shell Petroleum Development Company [SPDC]

*Tick as applicable*