

JOINT INVESTIGATION REPORT

INCIDENT NO: 2959852 JIV report S/N: 0000868

(Note: As practicable as possible the JIV report is to be signed in the field by all the participating parties)

A. GENERAL INFORMATION:

1. Fountain Incident Number: 2959852 2. Type of incident* OIL SPILL/FIRE
3. Name of Location 16" EGBEMA - ASSA PIPELINE
4. Name of nearest community OBIAKPU 5. State: IMO 6. LGA OTAJI-EGBEMA
7. Production Facility/Installation PIPELINE
8. Asset Owner/Hub THE SHELL PETROLEUM DEVELOPMENT COMPANY OF NIGERIA LIMITED (SPDC)/PIPELINE

B. INCIDENT INFORMATION:

9. Details of incident
a. Date Reported: 30TH MAY, 2021
b. Start date/time of Investigation: 1ST JUNE 2021/1250HRS
c. Investigation End date: 2ND JUNE, 2021 Day(s) on site: (2) TWO DAYS
d. Description of spill point environment
☐ Firm soil ☒ Loose soil ☒ Recently excavated area
☐ Under water ☐ Swampy ☐ Exposed pipe surface
☐ Well Platform (on water) ☐ Drill Rig ☐ Sand bag(s)

Additional observations around the spill point:

THE SPILL WAS ACCOMPANIED BY FIRE

e. Description of leak point (tick as applicable);

- | | | |
|--|---|--|
| <input type="checkbox"/> Smooth round-edge hole | <input type="checkbox"/> Rough-edge hole | <input type="checkbox"/> Hack saw cut |
| <input type="checkbox"/> Complete Rupture | <input type="checkbox"/> Inward dent, | <input type="checkbox"/> Well head tampering |
| <input type="checkbox"/> Failed Weld-on illegal hot tap valve | <input type="checkbox"/> Failed Clamp, | <input type="checkbox"/> Missing Pipeline/Flowline |
| <input checked="" type="checkbox"/> Crude oil theft (illegal bunkering) point, | <input type="checkbox"/> Saver-pit over flow | <input type="checkbox"/> Third party tampering with Clamp |
| <input type="checkbox"/> Third party tampering with valve setting | <input type="checkbox"/> Bulging Outward | <input type="checkbox"/> Third party tampering with flange, |
| <input type="checkbox"/> Flare System/Bund wall failure | <input type="checkbox"/> Cold vent | <input type="checkbox"/> Surge vessel overflow, |
| <input type="checkbox"/> Valve Failure | <input type="checkbox"/> Relief valve failure | <input type="checkbox"/> Accidental 3 rd party equipment impact |
| <input type="checkbox"/> Tear (_____) | | |
| <input type="checkbox"/> Others (specify) _____ | | |

f. Incident caused by:

- ☒ Third party interference (Sabotage ☐; crude theft ☒; Line theft ☐; Accidental 3rd party damage ☐
☐ Operational ☐ Others (including Mystery spills) _____

*This can be: (a) Oil Spill (b) Drilling fluid/Chemical (c) Siltation (d) Water Leak (e) Fire (f) Non-leaking theft point removal

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g. Spill Point Coordinates (*Incidents $\leq 100\text{m}$ apart to be aggregated into one Joint Investigation Report)

h. Measuring unit

WGS84

Northing:	Easting:
<u>5.52165</u>	<u>6.75923</u>
<u>/</u>	<u>/</u>
<u>/</u>	<u>/</u>

C. RISK ASSESSMENT

10. Details of Environment

i. Type of environment where spill occurred (select one):

☐ Land ☐ Swamp ☐ Water ☒ Seasonal swamp ☐ Shoreline/Waterfront

ii. Type of environment to which oil has spread:

☒ Land ☒ Swamp ☐ Waterbody (specify) _____

iii. Weather condition

☒ Dry ☐ Wet ☐ Windy ☒ Hot

11. Distance to Sensitive habitat within 100m radius

☐ Government reserved and designated protected area [,m]
☒ Drinking water source [15 ,m]
☐ Surface water ☒ Borehole
☒ Built up Area [20 ,m]
☒ Residential Area ☐ Commercial/Industrial Area
☒ Farmlands [0 ,m]
☐ Fish Farm/Pond [,m]
☒ Fishing net [0 ,m]
☐ Others (specify) _____ [,m]

12. Containment measures put in place:

☐ Booms ☐ Trench ☐ Dyke ☐ Pit ☒ Natural depression ☐ None

☒ Others: NATURAL ELEVATION

13. Any pictures or video coverage? ☒ [N]

14. Further response/repair initiated as at the time of JIV? ☒ [N]

If yes to item 14, give brief description:

REPAIR BY CLAMPING

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15. Was there any disruption to the investigation? [Y] [☒]

If yes to item 15 give brief description:

NOT APPLICABLE

16. Was JIV delayed? [Y] [☒]

Reason(s):

- ☐ Delayed Community Access Approval ☐ Security Challenges ☐ Access constraint due to terrain
☐ Others (specify) NOT APPLICABLE

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

17. Structures / Properties

S/N	Type of Structures	Description	Size	Number	Comments
<u>NONE SEEN WITHIN AREA OF IMPACT</u>					

18. Crops/Economic Trees

S/N	Type of crops	Young	Medium	Matured	Quantity	Comments
<u>1</u>	<u>CASSAVA</u>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<u>FEW</u>	<u>IMPACTED</u>
<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>

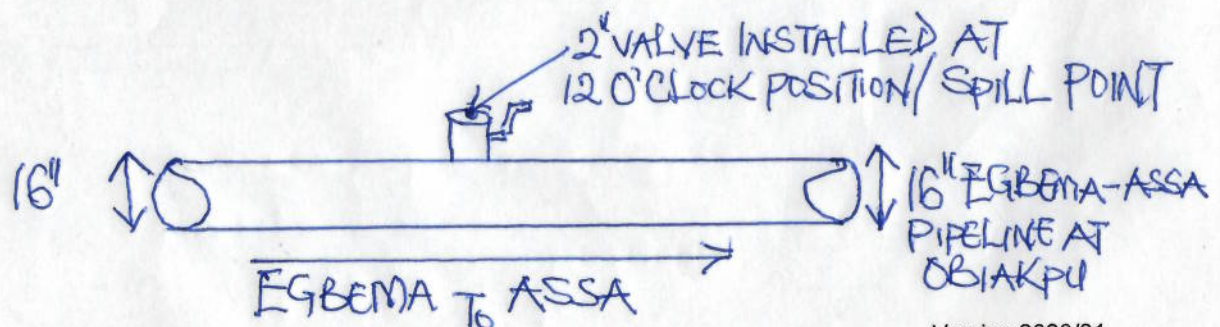
19. Fish/Nets/Ponds

S/N	Fish/Nets/Ponds	Description	Quantity/Size	Comments
<u>1</u>	<u>NETS</u>	<u>LOCAL WOODEN NETS</u>	<u>FEW</u>	<u>IMPACTED</u>
<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>	<u>/</u>

20. Others (Specify) e.g. Animal Traps

S/N	Others	Description	Quantity/Size	Comments
<u>NONE SEEN WITHIN AREA OF IMPACT</u>				

E. GRAPHIC DESCRIPTION OF LEAK POINT (while detailed description of the leak point should be contained in the leak report, overview sketch of the site should be added as appendix 1) A SECTION OF 16" EGBEMA-ASSA PIPELINE AT OBIAKPU SHOWING A 2" BALL VALVE INSTALLED AT 12 O'CLOCK POSITION BY UNKNOWN PERSON(S).



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F: TABLE SHOWING SOME OF COORDINATES TAKEN DURING JIV FOR AREA CALCULATION

21. Impacted area boundary Coordinates (If more, Print and attach as Appendix)

[illegible]

16" Egbema-Assa Pipeline at Obiakpu Spill impact JIV Coordinates**FID : 2959852****Date: June 2, 2021**

PT_ID	LAT	LONG
1	5.52336	6.75936
2	5.52301	6.75911
3	5.52297	6.75916
4	5.52291	6.7591
5	5.52292	6.75905
6	5.52203	6.75868
7	5.5219	6.75895
8	5.52219	6.75926
9	5.52247	6.75938
10	5.5225	6.75945
11	5.52218	6.75945
12	5.52106	6.75973
13	5.5207	6.75922
14	5.52072	6.75913
15	5.52082	6.75912
16	5.52091	6.75888
17	5.52072	6.75876
18	5.51994	6.7577
19	5.51992	6.75735
20	5.52082	6.75671
21	5.5215	6.75726
22	5.52289	6.75683
23	5.52318	6.75668
24	5.52334	6.75706
25	5.52301	6.75738
26	5.52292	6.7576
27	5.5229	6.75796
28	5.52291	6.75818
29	5.52353	6.75885
SP	5.52165	6.75923

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G. INCIDENT INFORMATION:

a. Impacted Area Details *

- Total calculated area of impact (Ha) 8.03HA
- Impact within SPDC R.O.W YES
- Impact outside SPDC R.O.W YES

* Round off to 2 decimal places if area is $\geq 100 \text{ m}^2$ or to 4 decimal places if area is $< 100 \text{ m}^2$ (e.g. 14.55, 0.0051, 0.0009)

* Express in Hectares (Ha)

b. Volume of oil recovered before completion of JIV (V_{rec}):

Recovered oil V_{rec} :	<u>NIL</u>	Barrels
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Controlled recovery/evacuation from source with no impact to environment:

<u>NIL</u>	Barrels
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c. Net Estimated Spilled Volume $V_{\text{Est}}(\text{bbls})^* = 103.68 \text{ BARRELS}$

Estimated Reported Volume** $V_{\text{rep}}(\text{bbls}) = 104 \text{ BARRELS}$

*Notes:

- Volume estimation was done using an excel based tool. (see attached for details on the calculation)
- Reported spilled volume is an estimate

Write other relevant notes taken into consideration for volume estimation or cause of spill:

THE SPILL WAS ACCOMPANIED WITH FIRE.

Calculation of the respective estimated volume is to be done on site as far as practicable using the new spill volume estimation software on site; Conversion of m^3 to barrels is $\text{Volume (m}^3) \times 6.29$; **Round up estimated volume to next whole number using the following rules:

- Any spill volume in excess of 1 bbl is rounded up to the next whole number.
- Any spill volume in less than 1 bbl is rounded up to the next 0.1 bbl.

Examples: Calculated volume = 15.3 bbl ----- Reported volume = 16 bbl
Calculated volume = 0.35 bbl ----- Reported volume = 0.4 bbl
Calculated volume = 0.01 bbl ----- Reported volume = 0.1 bbl.

Wherever this estimation tool is not applicable please refer to paragraph 6c (Deviations) of the JIV procedure to use appropriate steps for column estimation; record the calculation in a plain sheet of paper and attach to the JIV report.

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d. General Status of the site

- | |
|--|
| i. Joint investigation of the incident site found that there is no residual impact after the initial response and JIT therefore recommend that the site be closed out <input type="checkbox"/> |
| ii. Investigation of the incident site showed that there is residual impact on site requiring further works <input checked="" type="checkbox"/> |

e. Representatives

This report was filled, agreed and signed by the following joint investigation team representatives:

- Host Community: ☒
- Department of Petroleum Resources [DPR]: ☐
- National Oil Spill Detection and Response Agency [NOSDRA]: ☒
- State Ministry of Environment [SME]: ☒
- The Shell Petroleum Development Company [SPDC]: ☒
- Separate DPR form has been filled out with same findings ☐
- Separate NOSDRA form has been filled out with same findings ☒
- Separate SME form has been filled out with same findings ☒

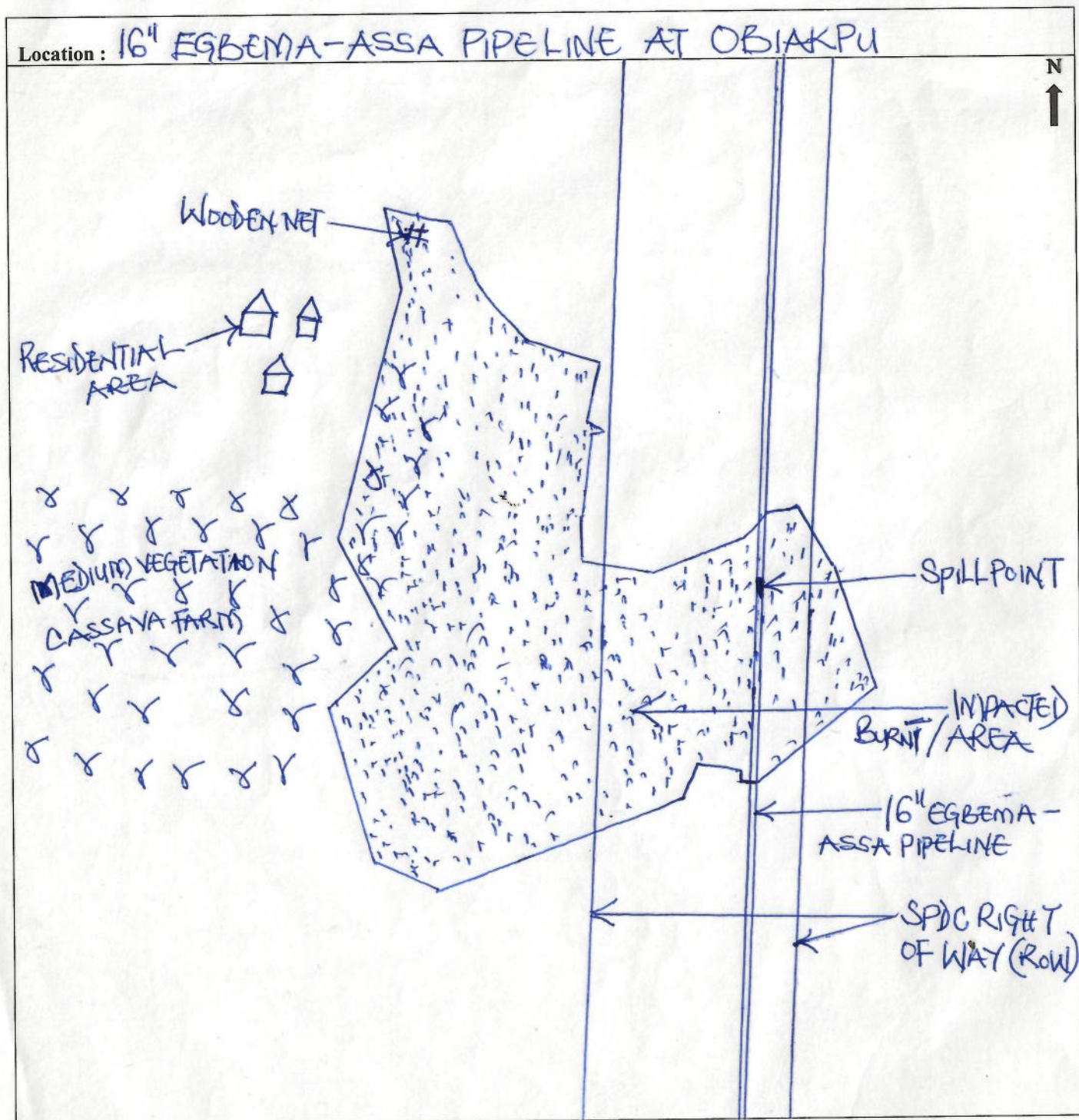
Tick as applicable

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f. Appendix 1: Overview sketch of the site



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