

JOINT INVESTIGATION REPORT

INCIDENT NO: 2820444 JIV report S/N:

0741

(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: 2820444 2. Type of incident* OIL SPILL
3. Name of Location 18' ASSA - RUMUKEPE PIPELINE
4. Name of nearest community OCHA 5. State: IMO 6. LGA OHAJI-EGBEMA
7. Production Facility/Installation CRUDE OIL PIPELINE
8. Asset Owner/Hub THE SHELL PETROLEUM DEVELOPMENT COMPANY
OF NIGERIA LIMITED / PIPELINE

B. INCIDENT INFORMATION:

9. Details of incident
a. Date Reported: 29TH DECEMBER, 2020
b. Start date/time of Investigation: 31ST DECEMBER 2020 / 12:05 HRS
c. Investigation End date: 31ST DECEMBER 2020 Day(s) on site: ONE DAY
d. Description of spill point environment

- | | | |
|---|--|---|
| <input type="checkbox"/> Firm soil | <input checked="" type="checkbox"/> Loose soil | <input checked="" type="checkbox"/> Recently excavated area |
| <input type="checkbox"/> Under water | <input type="checkbox"/> Swampy | <input type="checkbox"/> Exposed pipe surface |
| <input type="checkbox"/> Well Platform (on water) | <input type="checkbox"/> Drill Rig | <input checked="" type="checkbox"/> Sand bag(s) |

Additional observations around the spill point:

BLACK POLYTHENE MATERIAL WAS OBSERVED.

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 checked="" 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

Distribution of copies: White (Asset Owner); Pink (DPR); Green (NOSDRA); Yellow (State Ministry of Environment); Blue (Host Community)

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g. Spill Point Coordinates (*Incidents ≤100m apart to be aggregated into one Joint Investigation Report)

h. Measuring unit

WGS 84

Northing: <u>LATITUDE</u>	Easting: <u>LONGITUDE</u>
<u>5.34582</u>	<u>6.79462</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

- | | | |
|---|---|-----|
| <input type="checkbox"/> Government reserved and designated protected area | [| ,m] |
| <input type="checkbox"/> Drinking water source | [| ,m] |
| <input type="checkbox"/> Surface water <input type="checkbox"/> Borehole | | |
| <input type="checkbox"/> Built up Area | [| ,m] |
| <input type="checkbox"/> Residential Area <input type="checkbox"/> Commercial/Industrial Area | | |
| <input type="checkbox"/> Farmlands | [| ,m] |
| <input type="checkbox"/> Fish Farm/Pond | [| ,m] |
| <input type="checkbox"/> Fishing net | [| ,m] |
| <input type="checkbox"/> Others (specify) _____ | [| ,m] |

} NONE SEEN
WITHIN VICINITY

12. Containment measures put in place:

- Booms
 Trench
 Dyke
 Pit
 Natural depression
 None

Others: _____

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:

RECOVERY AND REPAIR ACTIVITIES ARE ONGOING.

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

If yes to item 15 give brief description:

NOT APPLICABLE

16. Was JIV delayed? [Y] [X] N

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
NONE WITHIN AREA OF IMPACT					

18. Crops/Economic Trees

S/N	Type of crops	Young	Medium	Matured	Quantity	Comments
NONE WITHIN AREA OF IMPACT						

19. Fish/Nets/Ponds

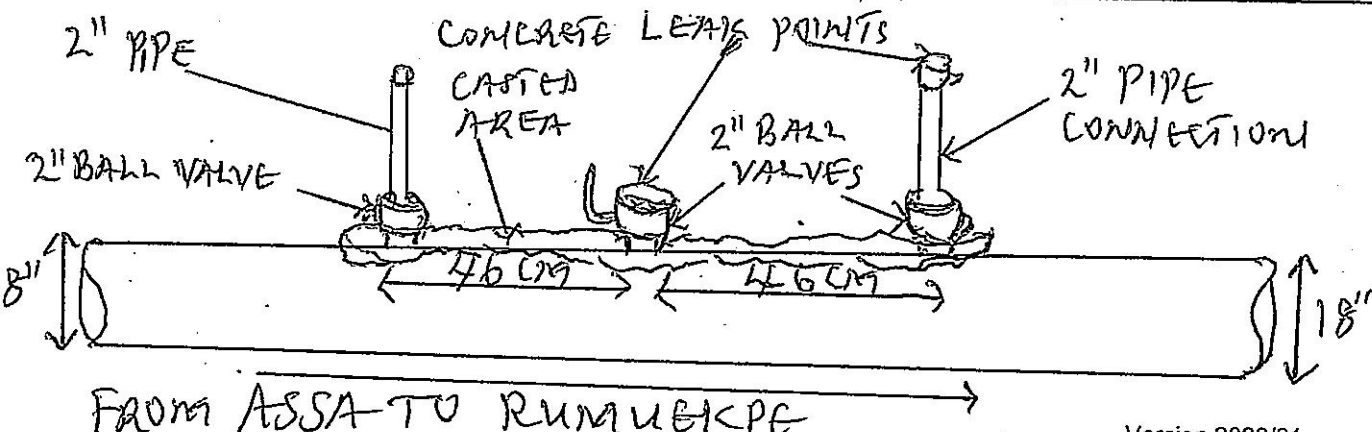
S/N	Fish/Nets/Ponds	Description	Quantity/Size	Comments
NONE WITHIN AREA OF IMPACT				

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

S/N	Others	Description	Quantity/Size	Comments
NONE WITHIN AREA OF IMPACT				

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)

SECTION OF 18" ASSA - RUMUEKPE PIPELINE AT OCHIA
SHOWING 3 NOS OF CRUDE OIL THEFT POINTS INSTALLED AS
12 O'CLOCK POSITIONS BY UNKNOWN PERSONS.



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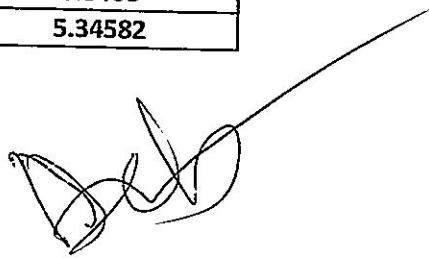
F: TABLE SHOWING SOME OF COORDINATES TAKEN DURING JIV FOR AREA CALCULATION

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

S/N	Northing	Easting

SEE ATTACHED APPENDIX A

APPENDIX A		
18" ASSA-RUMUEKPE TRUNKLINE AT OCHIA		
INCIDENT NUMBER:2820444		
POINT	LONGITUDE	LATITUDE
1	6.79488	5.34682
2	6.79486	5.34669
3	6.79483	5.34673
4	6.79477	5.34666
5	6.79476	5.34637
6	6.79466	5.34615
7	6.79459	5.34581
8	6.79465	5.34579
9	6.79462	5.34572
10	6.79455	5.34547
11	6.79455	5.34529
12	6.7945	5.34512
13	6.79444	5.34508
14	6.79447	5.345
15	6.79433	5.34459
16	6.79424	5.3441
17	6.79414	5.34371
18	6.79412	5.3437
19	6.79405	5.34346
20	6.79404	5.34339
21	6.79406	5.34339
22	6.79425	5.34404
23	6.79459	5.34534
24	6.79474	5.34591
25	6.79492	5.3468
sp	6.79462	5.34582



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G. INCIDENT INFORMATION:

a. Impacted Area Details *

- Total calculated area of impact (Ha) 0.25 Ha
- Impact within SPDC R.O.W YES
- Impact outside SPDC R.O.W NO

* 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>18</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_{Est} (bbls)* =

170.68 BARRELS

Estimated Reported Volume** V_{rep} (bbls) =

171 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:

NOT APPLICABLE

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

<p>This report was <u>filled</u>, <u>agreed</u> and <u>signed</u> by the following joint investigation team representatives:</p> <ul style="list-style-type: none">• Host Community: <input checked="" type="checkbox"/>• Department of Petroleum Resources [DPR]: <input checked="" type="checkbox"/>• National Oil Spill Detection and Response Agency [NOSDRA]: <input checked="" type="checkbox"/>• State Ministry of Environment [SME]: <input checked="" type="checkbox"/>• The Shell Petroleum Development Company [SPDC]: <input checked="" type="checkbox"/>• <i>Separate DPR form has been filled out with same findings</i> <input checked="" type="checkbox"/>• <i>Separate NOSDRA form has been filled out with same findings</i> <input checked="" type="checkbox"/>• <i>Separate SME form has been filled out with same findings</i> <input type="checkbox"/> <p style="text-align: right;"><i>Tick as applicable</i></p>

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f. Appendix 1: Overview sketch of the site

