SIO Gravity Tie Report – R/V Sally Ride

Date of Tie (yyyymmdd):

20180716

Base Station Code, Port & Cruise Name leg (e.g., DoD 2080-2, San Diego, RR1234):

DoD 0373-2 IGB 15744, Newport, SR1811

Gravity Base Station Location (describe as precisely as possible):

Hatfield Marine Science Center Absolute Gravity Station

Ship Location (port, pier, etc.; describe as precisely as possible):

Newport OSU Pier (44.37542 N, 124.02687 W)

(44.625661 N , -124.044870 W)

Land Meter ID (enter serial number of Lacoste & Romberg portable meter, or 'bp' if ship is docked at base station):

G-611

Location	**Time (UTC)** Add 24 hours if readings cross GMT midnight	**Reading – Take 3 per location** Reading from the portable gravity meter (e.g., 2345.67)			**Height (Inches)** Height of portable meter above sea level
First Pier measurement	mGal and free air calc: (4184.28+(1.02201*41.679)) + (155/12 ft*0.09406 mGal/ft) = 4228.091 mGal 1424	4141.679	4141.679	4141.679	L&R: 155" above water BGM-3 24" below water line
Base Station measurement	mGal calc: (4184.28+(1.02201*41.836))= 4227.037 mGal 1454	4141.836	4141.836	4141.836	Pier height above sea level if 'bp' tie:
Second Pier measurement	mGal and free air calc: (4184.28+(1.02201*41.623)) + (155/12 ft*0.09406 mGal/ft)= 4228.034 mGal 1509	4141.623	4141.623	4141.623	L&R: 155" above water BGM-3 19.5" below water line

Base Station Position: **LAT:** 44.622252 **LON:** -124.045651

Ship Gravimeter Still Reading from logged data (bias mGal = ~123,000):

980599.89579 = ([scale factor – see BGM-3] x [avg BGM-3 raw counts for tie period]) + [bias – see BGM-3]

(4.98247686 x 25141.1) + 855335.030

Comments:

No rain and minimal wind. Pier measurements were taken adjacent to BGM3 marking on ship. Absolute base station grav value of 980,585.99 mgals at Marine Hatfield Science Center. ABS G station ~ 1700' away.

Person(s) making tie:

Mary Huey, Annie Rosen